July-August 1994

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Special Seaplane Issue

U.S. Department
of Transportation

**Federal Aviation
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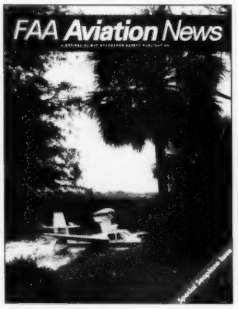

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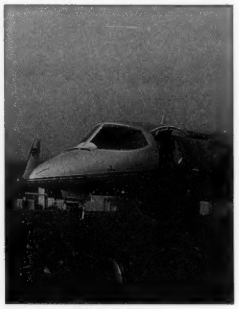

On the Back Cover:
Flying Jobs Ahead? See page 6. Photo courtesy of Learjet

What's the Old Cap'n up to now? See page 17.

The First Flight

by Phyllis Anne Duncan, *Editor*

Firsts always stay with us—the first party dress (for some of us), the first kiss, the first car, the first job, and so on. The general population can relate to any one of those. What most can't relate to—unfortunately for them—is a first flight.

Every pilot has a first flight story unique to him or her but universal in the sheer joy experienced. Mine was at the age of 15 in a Stearman. To this day nearly 30 years later I can close my eyes and see how blue the sky was and how white the clouds were and feel the wind in my hair. (It was waist-length then, and it took hours to remove the tangles, but I didn't care.) I think that image is one I will summon just before my last breath on this earth, so wonderful and joyful an adventure it was. From the moment the Stearman left the ground, I was hooked, and I schemed and plotted to find some way to do this again and again.

Everybody deserves a first flight.

There are now many aviation industry programs to introduce people to aviation. The Experimental Aircraft Association's Young Eagles program strives to provide a familiarization flight to 1,000,000 youngsters by 2003, the 100th anniversary of the Wright Brothers Flight. The Aircraft Owners and Pilots Association has Project Pilot, a mentoring program where pilots commit to introducing aviation to a non-flying friend in order to assure the continuance of general aviation. (See the AvNews/Briefs item on p. 28.) In its May 1994 issue *Flight Training* magazine takes a cue from a World War I military recruiting poster—"We Want You!—Bring a Friend into Aviation." What greater gift could you give a friend, a spouse, a relative than to introduce them to the joy of flying? You'll have something new to share with each other.

I've given a number of first flights; they are one of many things in aviation I enjoy doing. I've given them to kids (be careful, there, and use some judgement for younger ones) and seniors, yuppies and blue collar workers, men and women, veteran airline passengers and first-time-in-any-airplane flyers, and when I let them take the controls under my supervision, I get to relive through them the exultation of my first flight. "Wow," they usually say, "I'm really flying." Young or old, male or female, anyone is a candidate for a first flight.

And when you make that first flight a good experience (nice, calm day and no macho exhibitions on your part), you have enhanced the public's perception of general aviation. They'll go back to their friends and neighbors with a positive experience. When the uninformed make statements about how unsafe flying is and how we need to get rid of those little airplanes, they'll be able to dispute that with personal experience.

I'm sure every pilot knows someone who would enjoy a first flight. Identify that person or persons and get them in an aircraft. But don't just introduce them to the airplane (or helicopter, or glider, or balloon). Do some airport bumming with them, take them to an Accident Prevention Program safety seminar, let them watch you get your next phase in the Wings program, take them along to a PACE event or an Operation Raincheck—get them involved in all the aspects of aviation. Better yet, introduce them to a flight instructor and get them to invest in aviation's future.

Forecasts show that in the next several years aviation will need more pilots—for airlines and for general aviation. Contact EAA at (414) 426–4831 to find out if a chapter in your area is putting on a Young Eagles program, and take your children to it. Contact AOPA at (301) 695–2000 and find out how you can be a pilot mentor in the Project Pilot program. We must get people interested in aviation's future ***now.***

Tomorrow is too late. ■

U.S. Air Traffic Services Corporation

by Phyllis Anne Duncan, *Editor*

On May 3, Vice President Al Gore, Secretary of Transportation Federico Peña, and FAA Administrator David Hinson unveiled the Administration's proposal for the U.S. Air Traffic Services Corporation. Hinson said, "This signals the beginning of a new era—one characterized by increased efficiency, flexibility in managing our resources, and freedom from cumbersome regulations that have long restricted our ability to keep pace with advances in technology."

Secretary Peña said, "Today's announcement is good news for the traveling public, for the airlines, and for the controllers and technicians who keep the air traffic control system running. A new air traffic control corporation will decrease delays and inconvenience for travelers, will reduce costs for the airlines, and give the people who run the system the modern technology needed to maintain the highest levels of safety and sustain future aviation growth."

Under the proposal, 38,000 FAA employees directly involved in providing air traffic control services to airlines and private aircraft would become part of a new Air Traffic Services Corporation.

The proposed Air Traffic Services Corporation (ATS Corp.) would be responsible for controlling air traffic, maintaining the equipment of the National Airspace System, modernizing ATC facilities and equipment, conducting research into future ATC systems, and supporting national security activities.

As a wholly owned U.S. Government corporation, the not-for-profit ATS Corp. would be contained within the Department of Transportation and would exist as an organization separate from the FAA. The ATS Corp. would be headed by a chief executive officer in accordance with policy established by an 11-member board of directors. The directors would be representative of users of the nation's airspace, employee unions, the business community, and the general public. The Secretaries of Transportation and Defense will also sit on the board, and the FAA Administrator would have power to intervene to resolve safety problems.

If the ATS Corp. is enacted, the FAA will retain its historical mission of assuring aviation safety and security through its existing regulatory functions, will maintain safety oversight of the ATS Corp., and will continue its programs related to the promotion of airport development and safety.

Hinson said, "We've often said we need to operate our business like a business. The ATS Corp. will do just that. With its ability to borrow funds, the ATS Corp.'s management will have incentives to use the best available practices in managing its financial and human resources. The ATC system will be freed from burdensome procurement requirements as investors and users determine which projects will be developed before funds are raised and investments made."

Secretary Peña added, "The air traffic control system operates safely through the combined efforts of the FAA's work force and system users. But to keep the highest margin of safety with their outdated equipment, controllers must increase the separation between aircraft. This increases delays and imposes large cost penalties on airlines, passengers, cargo shippers, general aviation pilots, and other users. However, a well-structured federal corporation would be free to purchase technology more flexibly, borrow for long-term capital investments, and deploy and reward its workers more effectively."

As proposed the ATS Corp. will be financially viable and will not require appropriated funds. Initially, funding will come from the 10% ticket tax that passengers now pay and the aviation fuel excise tax. According to analyses, these fees are more than sufficient to fund the ATS Corp. long term, although the corporation will be free to set a fee schedule after the first year.

"Let me emphasize," said Hinson, "that we are totally committed to the ATS Corp., but the transition won't happen overnight. The proposal faces healthy debate in Congress, in the press, and among the scores of aviation special interest groups.

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H. Dean Chamberlain

Glassy Water? Beware!

About 12 years ago, while fishing on Malcom Lake, Ontario, I witnessed a glassy water mishap that every seaplane pilot could benefit from.

It happened during a beautiful evening as the sun had just set, and the water was like a mirror, giving a perfect reflection of the sunset and tree line. One might wonder which direction was up or down!

The absolute silence was broken by a Canada loon on final approach about 100 yards from the [fishing] boat. Little did I realize what was about to transpire.

It soon became apparent that he was not in a landing configuration and was in a rather steep approach path. At about 20 feet off the water, he had not lowered his skis, his flaps were still retracted, he still had too much power on, and was still coming down at 800-900 feet per minute. I had an urge to scream, "Round out!" when he hit the water with a heavy splash, skipped in the air, did a tumble, and landed tail first with a very embarrassed look on his face. Downy feathers were scattered about as he taxied away, visibly shaken. What an invaluable movie this would have made for any float[plane] school.

Here was a bird with excellent eyesight, probably more water time than all of us put together, a true natural navigator, crashing on a glassy water landing attempt.

The point should be more than self evident. Glassy water is very hazardous, even to our feathered friends, if we do not respect the magnitude of its dangers. In light of the above, may you consider some of the [following] points.

1. Plan your best approach path, flare path, and touchdown area to give you the lowest final visual reference, with the [fewest] obstructions and longest water run available. Check for boats and other obstructions, as proper glassy water technique requires considerable heads down attention. It is preferable to cross a low shoreline into long open water than to parallel a high shoreline, as side references divert your attention from more critical conditions such as airspeed, attitude, bank, and rate of descent.

2. Never attempt a glassy water landing into a shoreline as reference. Distance and altitude are easily misjudged.

3. Set your aircraft up in the landing configuration well before you cross your final visual reference; i.e., have your landing flaps, altitude, airspeed, and desired rate of descent completely stabilized with a constant power setting. Trim your aircraft in this condition until it is perfectly stable hands off.

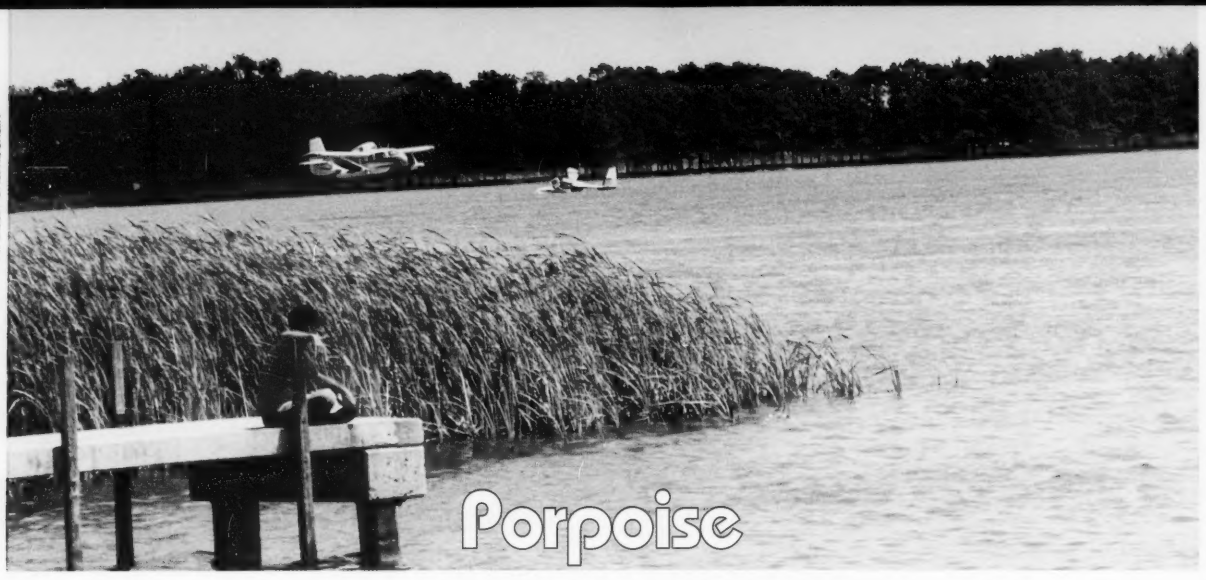
4. Plan your final approach path in this condition to cross your final visual fix into your desired landing area.

5. Keep a gentle, positive rate of descent until touchdown, then close the throttle and carry out your water technique for your aircraft type. Do not be concerned about a soft touchdown to impress your passengers, as water landings have no time for pride. Instead, devote your attention to the critical things such as attitude, speed, rate of descent, and remaining water. If you are in high terrain, beware of becoming boxed in and committed to landing because of high shoreline.

6. Finally, never attempt glassy water [landings] without being properly checked out. Practice them often on normal water conditions so you feel more comfortable getting your aircraft properly set up and feel more relaxed and confident when faced with the real conditions.

ALWAYS REMEMBER: Never strap yourself into an aircraft—strap the aircraft to you! ■

This article, submitted by a Canadian seaplane pilot whose name has been lost, originally appeared in the Summer 1993 issue of Water Flying, *the publication of the Seaplane Pilots Association (SPA). For additional information on SPA, contact Robert Richardson, SPA, 421 Aviation Way, Frederick, MD 21701–4756; (301) 695–2083.*



H. Dean Chamberlain

Porpoise

by Pierre Rivest, *reprinted with permission from* Water Flying©

Fortunately, we don't hear too often that a seaplane pilot has porpoised; unfortunately, when we do hear about porpoise it's, most of the time, to learn about a fatal story.

What is porpoise, why and when does it occur?

Porpoise is the result of a seaplane bouncing on the water surface just like a wheelplane could bounce on a runway. But on water, the end result can be a lot more dramatic. Why?

First, let's question ourselves about the reasons why a pilot will bounce his landing. For two major reasons: 1) Because he has touched the surface with the airplane in a wrong attitude, usually with the nose too low and with too much speed. 2) Most of the time when the airplane touches the surface too hard, the pilot has the tendency to overcome the impact by first pulling on the control column which, combined with the initial bounce, pitches the aircraft further high in the air; realizing that he is then in an uncomfortable and alarming situation, he pushes the nose down; but being too low for such a maneuver, the airplane hits the surface again, harder and bounces back into the air with the pilot fighting the aircraft always behind the situation and over controlling. On the third and fourth bounce, depending on the speed at which it initially started and on the exaggeration of the maneuvers, the airplane will hit the surface, this time very heavily with a nose down attitude, if it had not stalled before.

Such a landing on the ground which could be called a "kangaroo" landing may cause serious damage to the airplane and hurt the occupants; on water the consequences can be a lot more dramatic since the seaplane may turn upside down and sink. Why? For the following reasons: 1) although water is a liquid, it looks just as hard as the ground can be when hit by something flat; it also offers a lot greater resistance. 2) Water surface varies going often from a "glassy water" condition to very high waves. 3) The floats or keel of a seaplane, unlike the landing gear and tires of a wheelplane, have no shock absorber effect at all, which, at the first bounce, kick the seaplane back in the air higher than it would be with the landplane. 4) Finally, it is more difficult to judge the height above the water than it is above the ground.

As a consequence of all this, if the pilot lets the seaplane bounce more than once, unless proper action is taken, porpoise will develop and after the third or fourth bounce the bows of the floats, or the keel, will dig into the water with still sufficient speed for the aircraft to tilt over its back.

At this point, it is important to notice that with a seaplane on keel (most of the time an amphibian), the risk to porpoise is greater than with a seaplane on floats because although the surface area of the keel may represent the same square footage as for the two floats combined, it is flatter. It reacts then just like a flat stone thrown on the water surface which bounces better than a sharp edge bulky stone.

How to avoid porpoise and how to stop it if it ever happens?

As said previously, first make sure, before touchdown, that the nose of the seaplane is in the right attitude which is a "three point landing attitude" (in other words, never try a "greasy" landing). Control the descent with the power and when the floats touch the water surface, even if it is considered as a "hard landing," do not pull on the control column. Just maintain the nose attitude where it is (do not pull or push), close the throttle and easily bring the control column fully back.

If, unfortunately, you have the wrong reflex and pull on the control column, hence pitching the seaplane back in the air, you will then experience a first bounce. To avoid a second bounce, hence porpoise, since in such a case you have sufficient speed, keep the nose of the aircraft in a normal straight climb attitude, apply full power, start climbing, set flaps for climb and regain altitude (not less than 500 feet above water); do not fight the aircraft. Stabilize the seaplane in a level flight condition and start a new approach and landing. If the lake is too short to allow a second landing in the same direction, take sufficient altitude and pro-

H. Dean Chamberlain

ceed with a complete new circuit, approach and landing.

In any case, do not try to land immediately after a first bounce unless you are an expert and you have been taught to carry [out] such a maneuver.

Finally, remember that the size of the waves can contribute to porpoise since the seaplane may bounce from one wave to another. The danger resides in the fact that the floats or the keel, with the decrease in speed, can hit a high wave underneath its crest which may cause the aircraft to capsize. Landing on high waves, whether it is on a lake or on high sea (ocean), is for experts only and must be avoided unless the pilot has been specially trained for such conditions and that his seaplane is capable of supporting severe shocks.

There is a scale proposed in my book entitled "Bush Pilot" that gives various envelopes that take into account the size of the seaplane in relation to the strength of the wind which, in return, accounts for the size of the waves. Do not exceed the envelope in which you should remain according to your seaplane and experience.

In conclusion, porpoise is the result of a bad approach, a too low aircraft nose attitude and too high a speed, which all combined will result in a hard or bouncing landing. After the first bounce, don't get desynchronized, control the aircraft nose attitude and direction, apply full power, climb, take sufficient altitude, resume level flight and reattempt a new approach and landing straight ahead or after a full circuit if necessary. Do not force the wind nor the size of the waves. If you fly a seaplane on keel, be more careful. ■

SPA Editor's Note: *This piece may suffer slightly in structure due to the translation from French to English.*

Pierre Rivest is the CEO of Bureau aeronautique P.R. Enr., Longueuil, Quebec, (514) 651–9173. He won the Canadian Safety Award for 1993 and is the author of "Bush Pilot," currently SPA's best-selling book.

U.S. Air Traffic Services Corporation

Continued from page 2

"We believe, however, that we can respond to questions and concerns and through the process, convince these groups that the ATS Corp. is the best way to ensure a strong future for the Nation's airspace and its air traffic control system."

Congress is scheduling hearings on ATS Corp. and must approve the proposal and enact legislation before the ATS Corp. becomes a reality. Within 30 days of the enactment of the ATS Corp.'s enabling legislation, the President will appoint an interim CEO. Within one year following enactment, and subject to certification by the FAA Administrator, the ATS Corp. will commence activities.

The proposal for an air traffic corporation responds to the recommendations of the National Performance Review and the National Airline Commission. ■

Vice President Al Gore, Secretary of Transportation Federico Peña, and FAA Adminstrator David Hinson at the ATS Corp. unveiling.

Flying Jobs Ahead?

by Wayne Phillips

It's a little scary, isn't it? Your offspring comes to you and says, "I want to be a professional pilot. Will you co-sign a loan for $30,000???" Or, perhaps you yourself have enrolled in a flight school, or maybe one of those pricey four-year aviation colleges, with one consuming vision: *I want to fly for the airlines or the Forbes 500!*

Most upstarts engaged in flight training today hoping to land in the cockpit as a paid aviator forge blindly ahead without really thinking about just how to pay back mom and dad, or retire the debt on an 18% Mastercard which has by now suffered serious meltdown. Somehow, it would all work out with the job situation. Reality, though, is difficult to avoid.

You pick up a *USA Today* and read about American Airlines' cutting back personnel and future equipment deliveries to stop the financial bleeding . . . then the flight attendants strike. The TV news about United's possible split into four regional carriers spreads around flight schools as quickly as a juicy rumor in the office. Boeing aircraft is contemplating layoffs of twenty-plus-thousand. The business of General Aviation continues to languish. Acquaintances who have left the flight school with brand new certificates and perhaps a diploma are back at *Taco Bell* working the night shift. *Scary is right*!

Hard to believe, but if you're contemplating joining the race for the professional cockpit seat, *now* just may be the best time to do it. If you are already in the hunt for flying jobs and have faced the rejection that so often comes after flooding the mails with resumes, then read on.

Gordy Howe had been one of the true stars of professional hockey several decades ago. One day, when asked why he was so successful throughout his career, he said, "It's simple. I'm not where the puck is, *I'm where it's going to be!*" That statement is profound in that it truly describes the philosophy of the young and maybe not so young *entrepreneurs* who are in flight training today.

Entrepreneur? Absolutely! An *entrepreneur* is a risk-taker in the face of difficult odds. An *entrepreneur* is willing to "lay it all on the line" for the potential of a big payoff. An *entrepreneur* is going to be "where the puck is going to be" in the future, and is preparing now for it!

Today's aviation employment market is grim, no doubt about it. The vision, though, is promising. Yes, Virginia, there is good news!

Continental Airlines emerged from Chapter 11 bankruptcy in 1993. Thousands gathered at the airline's Denver facility to celebrate, and they had good reason. Is the future of air travel bleak to these pros? No way! They stuck it out in face of adversity. Determined commitment made it happen, and that is what it takes to succeed in any competitive situation. The same can be said of TWA.

Southwest Airlines continues to befuddle the "old guard" with its hands-on progressive management style, efficient operations, quality conscious employees, and plain old business smarts.

Young, vibrant regional carriers like Mesa Airlines and Sky West are enjoying prosperity and, candidly, are worth more than even some of the traditional turbojet carriers . . . and, yes, there is hiring going on. At the annual meeting of the Transportation Research Board in Washington, DC this Spring, it was projected that the regional carrier industry will nearly double the growth of the majors this decade.

The National Aviation Trades Association, which surveyed thousands of its members, concluded that flight training is a viable profit center for its membership and has been more robust recently than it has been for quite awhile. NATA, in order to promote primary training, launched its *Learn To Fly* promotional campaign after its April convention.

Although corporate flight departments may continue to downsize, since it is "politically incorrect" to sustain the perceived "company toys" in challenging economic times, NATA forecasts a surge in FAR Part 135 charter business as an offset. Corporate execs will still require schedule flexibility and service to remote destinations, and the 135

operator will be the answer. Nevertheless, the FAA projects the turbine-powered airplane fleet to increase from 9,273 in 1992 to 13,000 in 2004, for an annual growth of 29%.

Interest rates are low, and that means creative possibilities to start flying enterprises. One senior flight instructor at a major Western flight college got downright tired waiting for the majors to call. What did he do? He found investors, secured a Lear 35 on exclusive lease, and is now flying the bizjet on his own Air Taxi Certificate.

The most promising forecast comes from the Federal Aviation Administration.

In 1990, the Bush administration feared that the nineties would bring a severe pilot shortage late in the decade. President Bush mandated that the FAA study the situation and, in turn, the agency appointed a "Blue Ribbon Panel" of aviation top brass, nineteen in all, to examine the issues. A preview warned, "The current hiatus pilot hiring should be viewed as an anomaly and not a trend...this is the time to take an in-depth look at the problem in order to prevent future shortages."

Late in 1993, the panel's report was released: *Pilots and Aviation Maintenance Technicians for the Twenty-First Century... An Assessment of Availability and Quality*. The report examines the anticipated supply of and demand for pilots and aviation maintenance technicians for the next 20 years. In conducting its work, the panel conducted public hearings and heard testimony from industry movers and shakers, educators, pilots, and the common man for a year.

In plain English, these are the panel's own words which should serve as a source of encouragement to those pounding the pavement in search of jobs or to those preparing to invest in training:

> "There is no current numerical shortage of pilots or AMT's and it is apparent that there will not be a numerical shortage for the next few years. There is, however, an impending shortage of pilots and AMT's who meet the qualifications necessary to operate in the complex aerospace system of the future. Forecasts of revenue passenger miles (RPM's) point to a steadily increasing demand for pilots and AMT's. In fact, the reduction of the current oversupply, coupled with the resumption of capacity expansion, indicates that if history is allowed to repeat itself, there is a high probability that there will also be another numerical shortage after 1995. The new face on the problem will be to fill the dearth of qualified applicants, without depending on the usual quantities of well-trained military candidates. Though the situation is not critical today, it can become so without attention, planning, action, and intervention."

The panel considered various factors to estimate future needs for professional pilots employed by major air carriers, commuter air carriers, corporate flight departments, air taxi operators, pilot training companies, agricultural applicators, and other companies engaged in aerial work: total number of aircraft times crew size times the number of crews required to operate each aircraft; the highly touted retirement of senior airline pilots; normal attrition; modest growth.

Projected Pilot Demand

	Current (1992)		Projected (2004)	
	Total	New Hires	Total	New Hires
Major Air Carrier	55,981	–322	66,377	3,641
Commuter/ Regnl	15,680	2,864	19,048	3,033
Other Professnl	62,680	5,521	73,969	8,296
TOTAL	**134,521**	**8,063**	**159,394**	**14,970**

Despite the rosy outlook, the dilemma facing today's aspiring pilot pro is not acquiring the training for basic FAA certificates and ratings. There are plenty of training options, ranging from *Billy Bob's Flying School* at the local airfield to major aviation colleges and universities. The enormous challenge is the earning of experience and flight time, not simply to qualify for interviews, but to effectively compete in the job market.

Although all air carriers typically require 1,500–2,500 hours of flight time and 200–1,000 hours' multi-engine time for application acceptance, competitive realities are remarkably different. According to the *1991 Pilot Training Guide* published by the Future Aviation Professionals of America (FAPA):

> "Major and national airlines hire the best pilots in terms of quality flying experience, health and education. In the first six months of 1991, major airline new hires had on the average 3,586 total flight hours (1,867 hours jet time), 86 percent had an Airline Transport Pilot license (ATP), 94 percent had the Flight Engineer (FE) rating or FE written certificate and 93 percent had four years or more of college. New hires at national carriers averaged 5,505 total hours (3,080 hours jet time), 69 percent had an ATP, 62 percent had the FE or FE written and 61 percent had completed four or more years of college."

Traditionally, approximately 80% of major air carrier pilots are recruited from the military. The panel concludes that "The recent drawdown of U.S. military forces, combined with the military's efforts to retain their remaining pilots longer, will cause a significant shift of air carrier pilot hiring from military to civilian sources." Obviously, for those pilots working now or in the near future within the regional and corporate aviation sectors, the door of opportunity may open wider in the mid to late nineties.

The hiring standards for other professional pilots, most of whom are air taxi or corporate pilots, vary significantly depending on the size of the flight department and the type of aircraft flown. Pilots flying as PIC for air taxi operators are required to have a minimum of 1,200 hour's pilot time, a commercial pilot certificate, and, depending on the aircraft type, may also

be required to have an aircraft type rating. Many of these pilots are hired with at least 2,000 hours of total flight time. Less experienced pilots, those typically exiting a flight training program at an airport school or aviation college with only a commercial certificate and 250 hours, are often hired for aviation jobs such as towing banners or hauling freight . . . not the most financially rewarding job tracks.

The "Blue Ribbon Panel," in addressing solutions to its findings of future pilot shortages, makes specific recommendations:

- Closer cooperation between industry and schools to create a dialogue in which training and career opportunities are relayed to the schools.
- Opportunities to establish student internships and other work/ educational cooperatives.
- Opportunities for industry and the Department of Defense to make state-of-the-art equipment and training aids available to schools, either as surplus or as donations.
- Aviation education programs for elementary and secondary school teachers.
- Publicity to promote a positive image of aviation careers.
- Aviation orientation efforts for elementary and secondary school students.
- Scholarship, loan, and grant assistance to pilot candidates.
- Assistance and guidance for minorities, disadvantaged persons, and women to enter the aviation field. This could be accomplished by creating separate aviation career interest sections in affirmative action and minority hiring programs.

Clearly, then, the panel recognizes a need to attract young people to the industry so that the supply of pilot personnel can be replenished from the bottom up. But, the panel's report does not address a significant and, at time, insurmountable obstacle: *How can low-time pilots find entry-level jobs and, at the same time, support themselves so that time and experience can be gained for the future shortages should they come to pass? How does one make the transition from 250 to 2,000 hours?*

Beechcraft

It is estimated that there are 10,000 highly qualified professional pilots unemployed. Add to that number a stream of brand new, fresh CFI's exiting flight schools daily looking for entry-level positions to build the first 1,500 hours of logbook time. From 1989–1991, the FAA certificated 20,900 brand new flight instructors. It can be speculated that most of those new CFI's are looking to forge a career in aviation as a paid pilot. Today's search for work is not for the feint of heart.

The common track to filling the flight record is serving as a flight instructor for a period of time. These days, the proverbial "rude awakening" awaits the new CFI scouring the airports for work. Securing a position as an everyday line instructor is not as easy as it once was. Companies which hire flight instructors themselves have programs which train flight instructors. The natural tendency for the operator is to hire a known quantity from within, especially when the CFI prospect has invested hard cash in the company. Work is available, though, for the low-time pilot with a CFI rating. To find it requires daily dedication to the work of finding work, lots of phone calls, walking the airports, and networking. Once a position is found, be prepared for an income of between $6.00 and $15.00 *per flight hour*. It is the rare employer who pays a salary.

There are other ingenious alternatives for building time, but it may mean that an additional job as a sales clerk or waiter is required for a year or two to support life. Here are no less than ten thought-starters.

Find the local squadron of the Civil Air Patrol. Although instructors will not be paid, the organization has stringent training and recurrency policies for its mission pilots which require dedicated, competent instructors. The extra bonus with this kind of flying is the tax deductibility of expenses. Generally, a thriving CAP unit has access to well-maintained and equipped aircraft that can be rented below market rates to members, and the rental costs can be "written off" as a charitable deduction in many instances.

Start an aircraft leasing company. A large number of Fixed Base Operators (FBO) can use an additional rental aircraft on the line. Obtain working capital from friends or relations, learn the benefits of incorporation, and operate a legitimate aviation business which builds equity in the aircraft, offers low-cost personal use, and provides a host of "write-offs." Insist that the operator provide a job as part of the association.

Investigate banner and glider towing as either a personally-owned enterprise or as an entry-level career stop. Hundreds of hours can be accumu-

lated annually, and jobs are available. Contact parachuting clubs, too.

Advertise instructional services in specific industry trade journals. Every major metropolitan area publishes newsletters for lawyers, dentists, architects, teachers, etc. Become a *Professional Flight Training Consultant* and develop a clientele that is willing to pay $30 or $40 an hour for personalized ground school at their place of business. Form a working relationship with a FBO and rent only the best, clean equipment at a discounted rate. Then, sell an airplane to the customer!

Aerial photography requires nothing more than a quality camera, some skill, and an ability to sell to real estate companies, hunters, sporting organizations, farmers, landowners, government agencies, and advertising firms, to name a few.

Explore seasonal flying opportunities with scenic operators, or start a FAR Part 91 scenic operation in a resort area with nothing more than a rental aircraft and rack brochures. Incorporate, and enjoy the business deductions for lunch, travel, rental expense, and more.

With most charter companies offering expensive multi-engine transportation service, there is an increasing need for economical alternatives for short-haul, fair weather contract flying. Establishing a single pilot, single-engine FAR Part 135 company is relatively inexpensive and does not necessarily require aircraft ownership. An air taxi service can be formed solely with aircraft leasing [exclusive use of at least one aircraft]. A minimum of 500 hours and a Commercial Certificate/Instrument rating is all that is required of the pilot for VFR only operations.

Look for internship opportunities and pilot development programs. Occasionally, such governmental agencies as the Department of Interior and a few airlines will recruit stellar candidates with nothing more than 250 hours total time in the logbook.

Jobs are available in related industries that require the use of an airplane. Consider a recent graduate from Emery Aviation College in Colorado Springs who is now an agent for an aviation insurance firm and uses the company *Skylane* to service accounts in the East.

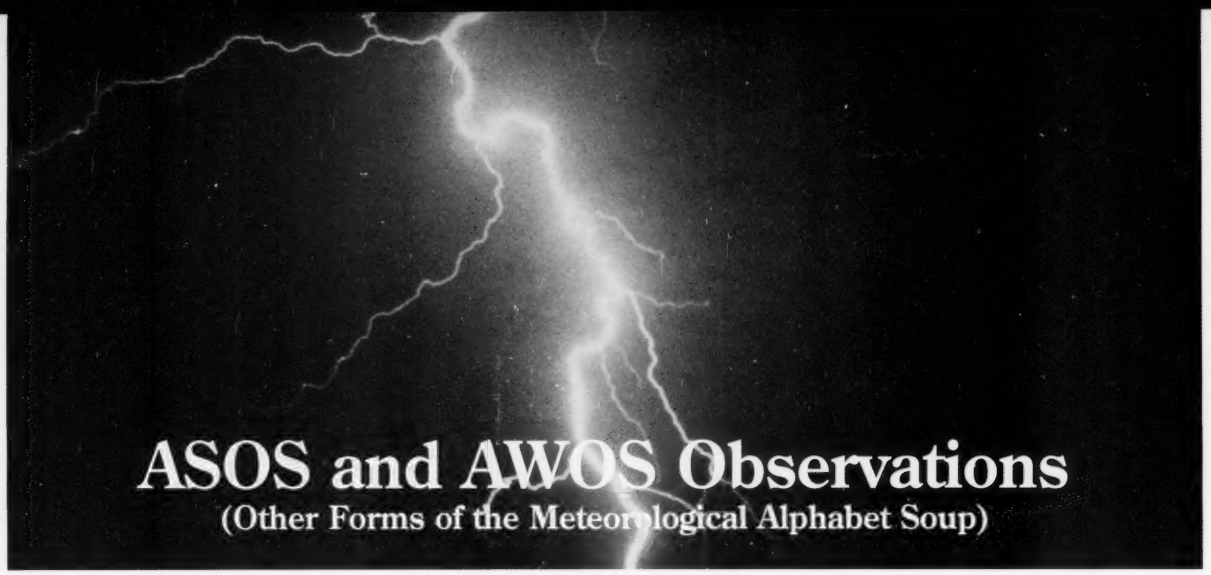
Work with an agriculture aerial applicator for a season, first as a ground handler, then as a pilot. Insurance policies are available which provide coverage for low-time pilots. Pay the additional premium for the low-time coverage to make it attractive for the sprayer.

Although the "Blue Ribbon Panel" insists its conclusions about the impending pilot shortages are valid, creative options to making a *permanent* living in commercial aviation outside of corporate and airline flying should not be overlooked. Why? Not everyone is going to "make it" as a professional pilot. In fact, some sources say that less than ten percent of those in training today with aspirations for an airline career will ever work in a major air carrier cockpit. So, then, after spending years and thousands of dollars, and finding the airline or corporate cockpit door closed, what else is there? GENERAL AVIATION offers the possibilities.

Become a fulltime, professional flight instructor for the large *ab initio* programs for $35,000 annually; form any kind of company that requires an airplane to cover the marketing territory; buy an existing agriculture spray company; manage and fly an airplane for a consortium of small businesses; fly the governor in a *King Air* as a "Trooper" for the State Patrol; transport prisoners by air for a state or private agency; direct an FBO with an air taxi certificate; sign-on as an FAA Inspector; find employment with an aircraft equipment manufacturer and fly as a manufacturer's representative; become a writer for an aviation magazine!

Now may be the window of opportunity. If there is only a shred of truth to the optimistic findings of the "Blue Ribbon Panel", now is the time to prepare for the mid-life career change or for the first jobs. It will certainly take time, preparation, money, perseverance, the ability to sell yourself into a job, and a great amount of "dues paying". But what profession doesn't? In the end, this may be the best year this decade to plan for the dream that persists for many pilots . . . actually being compensated for something that is more pleasure than it is work! ■

Wayne Phillips is an ATP, Denver FAA Examiner, nationally recognized speaker for the AOPA Air Safety Foundation, and contract instructor at United's Flight Center. As an Aviation Career Consultant, he conducts career workshops specializing in assisting the low-time pilot on college campuses throughout the country.



ASOS and AWOS Observations

(Other Forms of the Meteorological Alphabet Soup)

by Dan Gudgel

The development, implementation, and commissioning of a large number of automated weather observing stations—Automated Weather Observing Systems (AWOS) and Automated Surface Observation Systems (ASOS)—is now underway. In order to keep the aviation community informed the National Weather Service (NWS), in cooperation with the Federal Aviation Administration (FAA), has recently updated several of its pilot education publications, including the familiar card, "Key to Manual Aviation Weather Observations." Note that the title now includes the word "manual" to indicate the difference between it and automated stations.

AWOS can be one of four operationally classified systems implemented by the FAA. In addition, private procurement has led to the installment of some non-Federal AWOS systems. AWOS-A only reports altimeter setting, while AWOS-1 usually reports altimeter setting, wind data, temperature, dew point, and density altitude. AWOS-2 provides the same information as AWOS-1 plus visibility. AWOS-3 includes the information in AWOS-2 plus cloud/ceiling data.

Since ASOS is to be the primary surface weather observing system of the United States, in this article we will refer to ASOS capabilities.

The ASOS program will result in 1,700 systems being installed during the 1990's throughout the United States in a joint effort of the NWS, FAA, and Department of Defense (DoD). ASOS is designed to support aviation operations and, at the same time, support a variety of climatological, hydrological, and meteorological activities. While the two automated systems, AWOS and ASOS, are similar in their mission support to aviation, research and development supporting ASOS is broader than that of AWOS.

So why AWOS and ASOS? The answer lies in fiscal needs as well as more efficient use of existing staff. The NWS, FAA, and DoD collectively expend over 1,000 staff-years to take and disseminate Aviation Weather Observations (SAO) at a tremendous *recurring* cost. Many of the approximately 260 NWS offices, FAA Flight Service Stations, and contract observers within the United States currently take SAO's manually every hour. With the advent of more reliable and sophisticated sensors and computer technology, it has become increasingly practical to automate many observing functions. When fully implemented, ASOS will more than double the number of full-time SAO locations and enable valuable human resources to devote greater attention to other vital tasks, including aviation forecasts and warnings.

While the automated system and the observer may differ in their methods of data collection and interpretation, both produce an observation quite similar in form and content. [Note the accompanying "decoder" cards (pages 12–13) for Manual Aviation Weather Observations, AWOS, and ASOS]. For the "objective" elements such as pressure, ambient temperature, dew point tem-

The New and Improved AWOS-3

An enhanced AWOS-3 has been approved that will include the capability to report precipitation type (AWOS-3 P), thunderstorm/lightning occurrence (AWOS-3 T), or both (AWOS-3 P/T). The reporting of thunderstorms and/or lightning is determined from the occurrence of lightning within 30 nautical miles (nm) of the airport reference point (ARP). If lightning is detected within 10 nm of the ARP the AWOS will report a thunderstorm and lightning either at the airport (within 5 nm) or in the vicinity (5 to 10 nm). If the lightning is between 10 and 30 nm the AWOS will report lightning distant and the appropriate octant or position.

On June 6 the State of Minnesota began operation of the first AWOS-3 T (thunderstorm/lightning) installations and plans to have AWOS-3 P and AWOS-3 T/P installations operating by fall of 1994. Specific commissioning dates for locations in Minnesota and other states will be announced by NOTAM.

perature, wind, and precipitation accumulation, both the automated system and the observer use a fixed location and a time-averaging technique. The quantitative differences between the observer and the automated observation of these elements are negligible. However, for the "subjective" visual elements (sky condition, visibility, and present weather), *there is a difference*. This is what drives the need for user education regarding the observer-based SAO and an ASOS-based SAO. The human observer uses a fixed time, spatial averaging technique to describe the visual elements, while automated systems use a fixed location, time averaging technique.

As an example of a meteorological parameter, measured at a fixed location and time averaged, consider the ASOS sky condition report, i.e., cloud height and coverage. ASOS utilizes a laser beam ceilometer to measure cloud heights up to 12,000 feet above the sensor. Remember, this measurement is at a single point. The sky condition is determined by sampling the ceilometer data once every 30 seconds over a 30-minute period, with a double weight applied to the last 10 minutes of that period and recording a "hit" whenever the sensor detects a cloud. Cloud heights are clustered into no more than three layers for use in the SAO in accordance with specified rules. The summation principle is used to determine the cloud amount for each layer by summing the total number of cloud hits up to and including that layer and determining a ratio of hits to the total possible hits. The ASOS measured cloud amount for each layer is then converted to a statistical functional equivalent of a human observation for reporting purposes (below 12,000 feet), i.e., clear, scattered, broken, or overcast.

Contrast the ASOS fixed location, time averaged method for determining sky condition with that of the observer's fixed time, spatial averaged technique. An observer's scan of the entire celestial dome yields a spatial estimate of cloud coverage at a given time, with cloud heights still determined by the ceilometer and/or estimated.

Despite a fundamental change in the method of data collection and interpolation, a fundamental change, the manual and automated techniques yield similar results within the limits of their respective capabilities. Thus it behooves the pilot to understand these differences for optimum and safe use of the information provided by ASOS.

For the pilot it would be most beneficial to understand the Total Surface Observing Concept being implemented as the NWS modernizes in order to more fully appreciate the role of ASOS. The ASOS is only one source of surface observational data in the United States. Additional data are available from other sources which support aviation and/or other specific interests. The full complement of these data constitutes the Total Surface Observation, and it is derived from three main components:

- The Airport Operational Component
- The Supplementary Component
- The Complementary Technology Component.

The Airport Operational Component consists of the basic ASOS observation plus any on-site augmentation (manual input) considered important for the safe and efficient operations in the airport environment as well as additional information essential to aviation Terminal Forecasts. Any augmented data will be manually entered and become part of the ASOS message. Many ASOS locations will not require augmentation. At locations where augmentation is needed, it will be provided either full-time or part-time depending on various factors such as airport traffic, hours of operation, and aircraft safety considerations.

Despite the differences in observing techniques between ASOS and the human observer, the benefit to be attained by more than doubling the number of SAO sites is that many more airports will be opened to aviation operations which previously had been limited by the lack of weather observations. For the aviation community, the availability of weather reports at remote

MORE INFORMATION ON ASOS AND AWOS use will be available at any FAA Accident Prevention Program or Seminar on that subject. For more detailed information regarding the decoding as well as background of automated observations, please note the following reference list. The reference list is entirely comprised of federal sources and is available through all Government Printing Office outlets, NWS Offices, and FAA Accident Prevention Program Managers at FAA Flight Standards District Offices. Should the publications not be available at the time of your request, they may be ordered by use of the appropriate Public Affairs (NOAA/PA) number and title. Except for the *Airman's Information Manual*, all publications are free upon request.

1. NOAA/PA 93055; "Key to Manual Aviation Weather Observations/Key to Aviation Weather Forecasts"; dated 4/14/93.
2. NOAA/PA 93057; "Key to ASOS (Automated Surface Observing System) Weather Observations"; dated 4/14/93.
3. NOAA/PA 93058; "ASOS Guide for Pilots"; dated April 1993.
4. *Airman's Information Manual; Basic Flight Information and ATC Procedures*; "Chapter 7. Safety of Flight; Section 1. Meteorology; Paragraph 7–10. Weather Observing Programs".

KEY TO MANUAL AVIATION WEATHER OBSERVATIONS

LOCATION IDENTIFIER, TYPE AND TIME OF REPORT	SKY CONDITION AND CEILING	VISIBILITY, WEATHER, AND OBSTRUCTIONS TO VISION	SEA-LEVEL PRESSURE	TEMPERATURE AND DEW POINT	WIND DIRECTION, SPEED AND CHARACTER	ALTIMETER SETTING	REMARKS AND CODED DATA
MCI SA 0758	**15 SCT M15 OVC**	**1R — F**	**132**	**/58/56**	**/1807**	**/993/**	**R01VR20V40**

LOCATION IDENTIFIER:
3 or 4 alphanumeric characters (airport identifier).
TYPE OF REPORT:
SA = Scheduled record (hourly) observation.
SP = Special observation indicating a significant change in one or more of the observed elements.
RS = SA that also qualifies as an SP.
USP = Urgent special observation (tornado).
TIME OF REPORT:
Coordinated Universal Time (UTC or Z) using 24-hour clock. Example: 2255 = 10:55 pm.
SKY CONDITION AND CEILING:
Sky condition contractions are for each layer in ascending order. Numbers preceding contractions are base height in hundreds of feet above ground level (AGL). Sky condition contractions are: (— = Thin).
CLR = Clear: Less than 0.1 sky cover.
SCT = Scattered: 0.1 to 0.5 sky cover.
BKN = Broken: 0.6 to 0.9 sky cover.
OVC = Overcast: More than 0.9 sky cover.
—X = Partially obscured. 0.9 or less of sky hidden by precipitation or obstruction to vision (cloud bases at the surface).
X = Obscured: entire sky hidden.
A letter preceding height of a layer identifies a ceiling and indicates how ceiling was obtained.
E = Estimated. **M** = Measured.
W = Vertical visibility into obscured sky.
V following height = variable ceiling.

VISIBILITY:
Reported in **statute** miles and fractions.
V = Variable.
WEATHER & OBSTRUCTIONS TO VISION:

A	Hail	**GF**	Ground fog
D	Dust	**ZR**	Freezing rain
R	Rain	**BD**	Blowing dust
F	Fog	**SP**	Snow pellets
S	Snow	**BN**	Blowing sand
H	Haze	**SW**	Snow showers
K	Smoke	**BS**	Blowing snow
IF	Ice fog	**T**	Thunderstorm
L	Drizzle	**T+**	Severe thunderstorm
IP	Ice pellets	**RW**	Rain showers
IC	Ice crystals	**IPW**	Ice pellet showers
SG	Snow grains	**ZL**	Freezing drizzle

— = Light. (no sign) = Moderate. **+** = Heavy.
SEA-LEVEL PRESSURE:
Pressure in hectopascals (millibars): Shown as 3 digits. Leading 9 or 10 and decimal point is omitted. Examples: 150 = 1015.0 950 = 995.0
TEMPERATURE AND DEW POINT:
Reported in Degrees Fahrenheit (°F).
WIND DIRECTION SPEED & CHARACTER:
Direction in tens of degrees from **true** north, speed in knots. **0000** = calm. **G** = gusty. **Q** = squall. Peak speed of gusts in the past ten minutes follows G or Q. **WSHFT** in Remarks = windshift occurred at time indicated. Example: 3627G40 = 360° at 27 peak gusts 40 knots.

ALTIMETER SETTING:
Actual altimeter setting with first digit omitted.
Examples: 005 = 30.05" 992 = 29.92"
RUNWAY VISUAL RANGE (RVR):
RVR is reported for some stations. Value(s) during 10 minutes prior to observation are given in hundreds of feet. Runway number precedes RVR report. **V** = Variable.
DECODED REPORT:
Kansas City Int'l Airport: Record observation completed at 0758Z. 1500 feet scattered clouds, measured ceiling 2500 feet overcast, visibility 1 mile, light rain, fog, sea level pressure 1013.2 hectopascals, temperature 58° F, dewpoint 56° F, wind 180°, 7 knots, altimeter setting 29.93". Runway 01 visual range varying from 2000 to 4000 feet in the past 10 minutes.
PILOT REPORTS (PIREPS):
A PIREP describes actual in-flight conditions. Pilots are encouraged to provide PIREPS to an FAA facility. **Example:** UA /OV FRR 275045 /TM 1745 /FL330 /TP B727 /SK 185 BKN 220 280 BKN 310 /TA-53 /WV 290120 /TB LGT-MDT CAT ABV 310. **Decoded:** Pilot report, Front Royal VORTAC, 275 radial 45nm, at 1745Z, flight level 330; Boeing 727; cloud base 18500 broken, tops 22000, second layer 28000 broken, tops 31000; air temperature minus 53 degrees Celsius; wind 290 degrees 120 knots; light to moderate clear air turbulence above 31000.

KEY TO AWOS (AUTOMATED WEATHER OBSERVING SYSTEM) OBSERVATIONS

LOCATION IDENTIFIER TYPE OF REPORT TIME OF REPORT STATION TYPE	SKY CONDITION AND CEILING BELOW 12,000'	VISIBILITY	TEMPERATURE / DEW POINT / WIND DIRECTION, SPEED AND CHARACTER / ALTIMETER SETTING /	REMARKS: AUTOMATED REMARKS GENERATED AUTOMATICALLY IF CONDITIONS EXIST. AUGMENTED REMARKS ADDED IF CONDITIONS EXIST AND CERTIFIED WEATHER OBSERVER IS ATTENDING THE SYSTEM
HTM SA 1755 AWOS	**M20 OVC**	**1V**	**36/34/2015G25/990/**	**P010/VSBY 1/2V2 WND 17V23/WEA: R — F**

LOCATION IDENTIFIER: 3 or 4 alphanumeric characters (usually the airport identifier).
TYPE OF REPORT: SA = Scheduled record (routine) observation. All observations identified as SA. Most are transmitted at 20-minute intervals (approximately 15, 35 and 55 minutes past each hour).
TIME OF REPORT: Coordinated Universal Time (UTC or Z) using 24-hour clock.
STATION TYPE: AWOS = Automated Weather Observing System site. **Note:** In the future, some systems will use " AO " designators.
SKY CONDITION AND CEILING: Sky condition contractions are for each layer in ascending order. Numbers preceding contractions are base heights in hundreds of feet above ground level (AGL).
CLR BLO 120 = No clouds below 12,000 ft.
SCT = Scattered: 0.1 to 0.5 sky cover.
BKN = Broken: 0.6 to 0.9 sky cover.
OVC = Overcast: More than 0.9 sky cover.
X = Obscured sky **—X** = Partially obscured
A letter preceding the height of a base identifies a ceiling layer and indicates how ceiling height was determined.
M = Measured **W** = Indefinite

VISIBILITY: Reported in statute miles and fractions. Visibility greater than 10 not reported. **V**= variable: see Automated Remarks
TEMPERATURE AND DEW POINT: Reported in degrees Fahrenheit.
WIND DIRECTION, SPEED & CHARACTER: Direction in tens of degrees from true north, except voice broadcast is in degrees magnetic. Speed in knots. **0000** = calm. **G** = gusts. See Automated Remarks for variable direction.
ALTIMETER SETTING: Hundredths of inches of mercury. Shown as last 3 digits only without decimal point (e.g., 30.05 inches = 005).
PRESENT WEATHER/OBSTRUCTIONS TO VISION: Reported only when observer is available. See Augmented Remarks. In the future, some systems will report precipitation, fog, and haze in the body of the observation.
AUTOMATED REMARKS: Precipitation accumulation reported in hundredth of inches (e.g., P110 = 1.10 inches; P010 = 0.10 inch). **WND V** = variable wind direction. **VSBY V** = variable visibility. **DENSITY ALTITUDE** is included in the voice broadcast when more than 1000 feet above airport elevation.
MISSING DATA: Reported as " M ".

AUGMENTED REMARKS: " WEA: " indicates manual observer data. Remarks include operationally significant weather conditions within a five mile radius of the airport (e.g., thunderstorms, precipitation, obstructions to vision when visibility is 3 miles or less, fog banks). Standard weather observation contractions are used.
DECODED REPORT: Hometown Municipal Airport, observation at 1755 UTC, AWOS report. Measured ceiling 2000 feet overcast. Visibility 1 mile variable. Temperature 36 degrees (F), dew point 34 degrees (F), wind from 200 degrees true at 15 knots gusting to 25 knots, altimeter setting 29.90 inches. Precipitation accumulation during past hour 0.10 inch. Visibility variable between 1/2 and 2 miles. Wind direction variable from 170 degrees to 230 degrees true. Observer reports light rain (R—) and fog (F).
NOTE: Refer to the *Airman's Information Manual* for more information. Refer to the *Airport/Facility Directory*, aeronautical charts, and related publications for broadcast, telephone and location data. Check *Notices to Airmen* for AWOS system status.

KEY TO ASOS (AUTOMATED SURFACE OBSERVING SYSTEM) WEATHER OBSERVATIONS

LOCATION IDENTIFIER TYPE OF REPORT TIME OF REPORT STATION TYPE	SKY CONDITION AND CEILING BELOW 12,000'	VISIBILITY, WEATHER, AND OBSTRUCTIONS TO VISION	SEA-LEVEL PRESSURE / TEMPERATURE / DEW POINT / WIND DIRECTION, SPEED AND CHARACTER / ALTIMETER SETTING /	REMARKS AUTOMATED REMARKS GENERATED AUTOMATICALLY IF CONDITIONS EXIST. AUGMENTED REMARKS ADDED IF CONDITIONS EXIST AND CERTIFIED WEATHER OBSERVER IS ATTENDING THE SYSTEM	STATUS REMARKS SYSTEM GENERATED
HTM RS 1755 AO2A	M19V OVC	1R — F	125/36/34/2116G24/990/	R29LVR10V50 CIG 16V22 TWR VSBY 2 PK WND 2032/1732 PRESFR	ZRNO $

LOCATION IDENTIFIER:
3 or 4 alphanumeric characters (usually airport identifier).

TYPE OF REPORT:
SA = Scheduled record (hourly) observation.
SP = Special observation indicating a significant change in one or more of the observed elements.
RS = SA that also qualifies as an SP.
USP = Urgent special observation to report tornado.

TIME OF REPORT:
Coordinated Universal Time (UTC or Z) using 24-hr clock.

STATION TYPE:
AO2 = Unattended (no observer) ASOS.
AO2A = Attended (observer present) ASOS.

SKY CONDITION AND CEILING BELOW 12,000' AGL:
Sky condition contractions are for each layer in ascending order. Numbers preceding contractions are base height in hundreds of feet above ground level (AGL).
CLR BLO 120 = Less than 0.1 sky cover below 12,000'
SCT = Scattered: 0.1 to 0.5 sky cover.
BKN = Broken: 0.6 to 0.9 sky cover.
OVC = Overcast: More than 0.9 sky cover.
A letter preceding the height of a base identifies a ceiling layer and indicates how ceiling height was determined.
M = Measured **W** = Indefinite
E = Estimated **X** = Obscured sky
The letter **V** is added immediately following the height of a base to indicate a variable ceiling: see Remarks.

VISIBILITY:
Reported in statute miles and fractions from **<1/4** through **10+**. **V** = variable: see Remarks.

PRESENT WEATHER:
TORNADO (when augmented).
T = Thunder (when augmented): see Status Remarks.
R = Liquid precipitation that does not freeze (e.g., rain).
P — = Light precipitation in unknown form.
ZR = Liquid precipitation that freezes on impact (e.g., freezing rain): see Status Remarks.
A = Hail (when augmented).
S = Frozen precipitation other than hail (e.g., snow).
+ = Heavy. No sign = Moderate. **—** = Light.

OBSTRUCTIONS TO VISION :
Reported only when visibility is less than 7 statute miles.
F = Fog **H** = Haze
VOLCANIC ASH (when augmented).

SEA-LEVEL PRESSURE:
Tenths of Hectopascals (millibars). Shown as last 3 digits only without decimal point (e.g., 950 = 995.0).

TEMPERATURE AND DEW POINT:
Degrees Fahrenheit.

WIND DIRECTION, SPEED AND CHARACTER:
Direction in tens of degrees from **true** north. Voice broadcast in degrees from **magnetic**. Speed in knots. **0000** = calm. **E** = estimated. **G** = gusts. **Q** = squalls. Variable wind, peak wind, wind shift: see Remarks.

ALTIMETER SETTING:
Hundredths of inches of mercury. Shown as last 3 digits only without decimal point (e.g., 005 = 30.05 inches).

MISSING DATA: Reported as **M**.

DENSITY ALTITUDE: Included on voice broadcast only when 1000 or more feet above airport elevation.

REMARKS: Can Include:
RVR (Runway Visual Range), **VOLCANIC ASH**, **VIRGA**, **TWR VSBY** (Tower visibility), **SFC VSBY** (Surface visibility), **VSBY V** (Variable visibility), **CIG V** (Variable ceiling), **WSHFT** (Windshift), **PK WND** (Peak wind), **WND V** (Variable wind direction), **PCPN** (Precipitation amount), **PRESRR** (Pressure rising rapidly), **PRESFR** (Pressure falling rapidly), **PRJMP** (Pressure jump), **B** (Time weather began), **E** (Time weather ended).

STATUS REMARKS:
PWINO = Present weather information not available.
ZRNO = Freezing rain information not available.
TNO = Thunderstorm information not available.
$ = Maintenance check indicator.

DECODED REPORT: Hometown Municipal Airport, record special observation at 1755 UTC. ASOS with observer. Measured ceiling 1900 feet variable, overcast. Visibility 1 mile, light rain, fog. Sea-level pressure 1012.5 hectopascals, temperature 36°F, dew point 34°F, wind from 210° true at 16 knots gusting to 24 knots, altimeter 29.90 inches. Runway 29L visual range 1000 variable to 5000 feet. Ceiling 1600 variable to 2200 feet, tower visibility 2 miles, peak wind 200° true at 32 knots at 1732 UTC, pressure falling rapidly. Freezing rain information not available, maintenance check indicator.

NOTE: Refer to *ASOS Guide for Pilots* and the *Airman's Information Manual* for more information. Refer to the *Airport/Facility Directory*, aeronautical charts, and related publications for broadcast, telephone and location data. Check *Notices to Airmen* for ASOS system status.

airports will provide up-to-the-minute information thereby providing better flight planning and in-flight information.

The Supplementary Component consists of surface observing networks distinct from ASOS which provide specific data primarily for forecasting interests. These networks include: severe weather spotter networks, hydrological reporting networks, synoptic and climatological observing networks, and cooperative observing networks. Data from this component are not derived from ASOS and are not provided as part of the ASOS observation, but are instead provided as separate data sets or products. Examples of this type of data are: severe weather reports (tornado/funnel cloud, etc.), water equivalent of snow on the ground, and middle and high cloud information.

The Complementary Technology Component consists of data derived from other observing technologies. These technologies include:

- Satellite
- Radar (including the Weather Service Doppler Radar, WSR-88D)
- Lightning Detection Systems (LDS)

The data derived from these technologies will be provided as separate data sets or products and will help to improve aviation forecast techniques. In some cases this data will be directly available to aviation information telecommunication circuits and sources. The data in this category include thunderstorm coverage and intensity and total cloud cover. Please note that the radar coverage referred to here will be that of a *nationwide* Doppler Radar network, which is one of the benefits of the NWS Modernization and Associated Restructuring.

In summary, ASOS and AWOS are "a different way of doing business." The pilot, as a user of such information, must understand the advantages and limitations of the automated observation systems to make sound decisions regarding safety-of-flight. As the NWS Modernization and Associated Restructuring advances over the next two years, SAO's from a large number of ASOS and AWOS platforms will be made available. The additional meteorological data brought by improved technology, in addition to ASOS and highly trained NWS and FAA workforces, will result in a more complete current weather picture and an improvement in aviation forecasting and briefing capabilities for all categories of aircraft. ■

Editor's Note: *Mr. Gudgel works for the National Weather Service in the Aviation Services Branch, NWS Headquarters, Silver Spring, MD. He has been an active participant in the FAA's Accident Prevention Program, first with the Fresno, CA FSDO and currently with the Baltimore, MD FSDO. A professional pilot and flight instructor with ASEL, AMEL, Instrument—Airplane, Rotorcraft—Helicopter, he is also a Designated Pilot Examiner (gliders) and holds an agricultural pilot certificate from the state of California. He authored an article on NWS meteorological code changes which appeared in the April 1994 issue of* FAA Aviation News.

Piper Aircraft Corp.

A Brighter Future for General Aviation

by Phyllis Anne Duncan, *Editor*

Unlike the past several years, the mood at FAA's 4th Annual General Aviation Forecast Conference in March was optimistic across the board. FAA and industry representatives presented a picture that showed another couple of years of slight decline followed by an upswing in most forecast categories.

As with any forecast, however, that optimistic outcome is dependent upon several events, chief among them a burgeoning economy and the passage of a statute of repose for aircraft product liability. (The ebullient mood was enhanced by the news that the U.S. Senate had passed a compromise version of the statute of repose bill, agreeing on a 18-year repose on aircraft. As of press time, the bill was in committee in the House of Representatives, where it has 280 co-sponsors, well over the majority required for passage in the House.)

The FAA Viewpoint

FAA Deputy Administrator Linda Hall Daschle put it this way, "Buoyed by a strengthening economy, we're predicting modest gains in the sale of turbine-powered aircraft and steady increases in the number of instrument-rated pilots."

Pilots who add instrument ratings have continued to be the "growth industry" in general aviation, she said. Nearly 45% of pilots currently have instrument ratings, and FAA predicts that over 45% of pilots will be instrument rated by the new century.

"The success of airplane kits," Daschle continued in her speech before the 250 conference attendees, "along with strong sales in the used aircraft market, show the creativity and resilience that still exists in this industry. It is clear that the spirit to make things happen is still present in the GA community."

Daschle reiterated her and FAA Administrator David Hinson's support of general aviation. The FAA's commitment, she said, is evidenced in the revised General Aviation Action Plan (GAAP), which was released at the conference. The revised GAAP now reflects goals and milestones for the entire FAA in support of the general aviation industry. The GAAP's five objectives—Safety, Affordability, Airspace Access, Product Innovation, and FAA Services—are now part of a "comprehensive, coordinated plan of action" for the entire FAA.

In praise of FAA and industry partnership in safety efforts, Daschle cited NTSB accident statistics for 1993, showing the continuing downtrend in accidents in general aviation. "Even at last year's record lows, this equates—on an average—to six accidents every day." FAA, she stated, will continue to work with industry to lower that average. One example would be expanded programs of voluntary compliance, which establish an attitude that fosters exchange of high quality safety information.

The FAA's Accident Prevention Program, the Deputy Administration said, has been the focus of industry concerns over the past several months. The GAAP Coalition (see the March 1994 issue of *FAA Aviation News*) recently submitted several recommendations for the improvement of the FAA's foremost outreach program. The Accident Prevention Program's improvement is only one example of the FAA/industry joint collaboration.

The Industry Viewpoint

Representatives from most of the major general aviation advocacy groups gave presentations on their view of the state of the industry. Perhaps the most optimistic of the industry representatives was John W. "Jack" Olcott, president of the National Business Aircraft Association. 1994, he said, "may be a watershed year for general aviation." Internal reform in the FAA, an upsurge in NASA research in general aviation, the Senate passage of product liability reform, and the FAA approval of GPS all serve to brighten the picture, he said.

Olcott cited the importance of general aviation with a preponderance of economic statistics that would convert any naysayer:

- General aviation accounts for half of the 9,000,000,000 air miles flown

Linda Hall Daschle, FAA Deputy Administrator

each year and two-thirds of the hours flown.

- General aviation moves 120,000,000 people a year, more than either United or American and more than 20 other airlines combined.
- General aviation has 100 times more access to airports than airlines, serving all 17,000 U.S. airports.
- General aviation consumes less than 7% of all fuel in aviation.
- Seventy percent of general aviation flying is related in some way to business and commerce; indeed, "a company flight department is the best example of general aviation's service to society. It facilitates growth and strengthens the economy."

Because this was a forecast conference, Olcott presented the results of a recent NBAA poll of 20% of its members. The survey was designed to measure how members felt about the future of their portion of the industry. Most respondents felt comfortable enough about the improving economy to indicate that they would be adding new or used aircraft to their flight departments. The survey indicated that business use of aircraft was going up.

The Year in Review

John Rodgers, Director of FAA's Office of Aviation Policy, Plans, and Management Analysis, presented the forecast to the conference.

Personal/instructional flying is and has been the stable core of general aviation over the last decade. However, "the course of general aviation over the last 10 years," he said "has been rocked by the turbulence of an uncertain economy and the clouds of product liability." All the predictive factors that his group uses, however, along with a stronger economy, indicate optimism.

Rodgers began with a review of what 1993 held for general aviation. But 1993's numbers initially do not seem to be cause for optimism.

- General aviation aircraft shipments totaled only 811, down 8.8%; however, billings increased 5.3% to nearly $2 billion.
- Exports of general aviation aircraft totaled 355, down .6%, and export billings totaled $765 million—up 12%.
- Turboprop shipments (207) increased nearly 23%, jet shipments (168) decreased nearly 13% but began to increase in the last half of the year, and piston aircraft shipments (436) were down just over 17%.
- The pilot population as of January 1, 1993 was 682,959, down just over 9,000 from a year earlier. Only airline transport pilots showed an increase in numbers.
- General aviation aircraft operations at FAA towered airports numbered 35,100,000, down 5.1%. General aviation instrument operations (17,500,000) were down 3.9%, but en route general aviation operations went up to 7,400,000.

With such depressing numbers, what is there to be optimistic about concerning the growth of general aviation? Actually, FAA calls it "guarded optimism" and cites a number of ongoing events that suggest a general aviation renaissance:

1. The general aviation industry perceives that product liability legislation has a better chance of being enacted by Congress. Industry feels that this legislation would not only lower its insurance costs but would also enable manufacturers to begin to design and produce new technology and cheaper general aviation aircraft.
2. The amateur-built aircraft market has grown steadily over the past several years. Nearly 1,000 new amateur-built, experimental aircraft received airworthiness certification in 1992 and over 2,000 kits were sold by 14 different manufacturers.
3. The used aircraft market has remained strong. Thirty-six thousand aircraft changed hands in 1992. Prices for piston aircraft have also remained strong, reflecting pent-up demand for these aircraft.
4. The international use of general aviation aircraft has increased, most likely the result of businesses adapting to a global market.

Director of Flight Standards, Tom Accardi, explains Flight Standards' Strategic Plan to conference attendees.

5. Instrument operations at FAA towered airports have increased, reflecting a growing sophistication in general aviation pilots using the national airspace system.

6. General aviation operations at non-towered airports have increased 9% since 1978, lending some credence to the claim that general aviation has been forced from towered airports because of increased commercial air carrier activity.

7. Personal flying continues to increase as a percentage of total general aviation flying, from just over 27% in 1985 to just over 32% in 1992.

8. There is the growing climate of partnership between the FAA and the general aviation community, exemplified by the GAAP Coalition.

9. There is a growing effort to unlock general aviation's transportation potential through product innovation. The FAA and NASA have collaborated with the general aviation community to implement a research program to bring new technologies to the industry.

10. The FAA has exerted a tremendous effort towards cooperation with aviation authorities in Russia, China, and elsewhere in developing common standards. These initiatives could tap vast new markets in general aviation products in places where general aviation does not currently exist.

General Aviation Forecast 1994–2005

FAA's Office of Aviation Plans, Policy, and Management Analysis bases its forecast on a set of assumptions, not the least of which, as we've said, is the outlook for sustained, moderate growth in the economy. The forecasters have also assumed that product liability legislation will be passed and enacted sometime in 1994–1995. A strong economy is vitally important to growth in general aviation, and failure to pass product liability reform could negatively affect active fleet and hours flown forecasts.

Active Fleet

Over the forecast period, the general aviation active fleet is expected to decline in the early portion of that interval. This is logically based on the fact that the fleet's average age is 28 years and that the aircraft that are lost from the fleet are not being replaced. For a six-year period from 1993 to 1998 the number of single engine aircraft should decline from 143,580 to 131,100. That level, however, should remain throughout the remainder of the forecast period. After 1998, newer technology aircraft will begin to replace those aircraft "retired" from the fleet—***if*** product liability legislation is passed.

Multi-engine aircraft will also decline initially during the forecast period for the same reasons and are also expected to increase for the same reasons. Turbine-powered aircraft will grow throughout the forecast period, as will the rotorcraft turbine-powered fleet and gliders and lighter-than-air aircraft.

Aircraft Use

Average hours flown by general aviation aircraft have declined in the last decade, a result of the economic downturn. The economic indicators that predict economic growth should also improve this statistic. For example, single engine and multi-engine piston aircraft use are forecast to increase slightly between 1994 and 2005, turbine-powered aircraft use should increase 2.3 annually, and rotorcraft use could increase 1% annually over the 12-year period.

Hours Flown

The number of hours spent in the air is forecast to grow at a rate of 1% annually for the forecast period, reaching 28.9 million hours in 2005. This increase will be reflected mainly in multi-engine, turbine, and rotorcraft usage.

Pilot Population

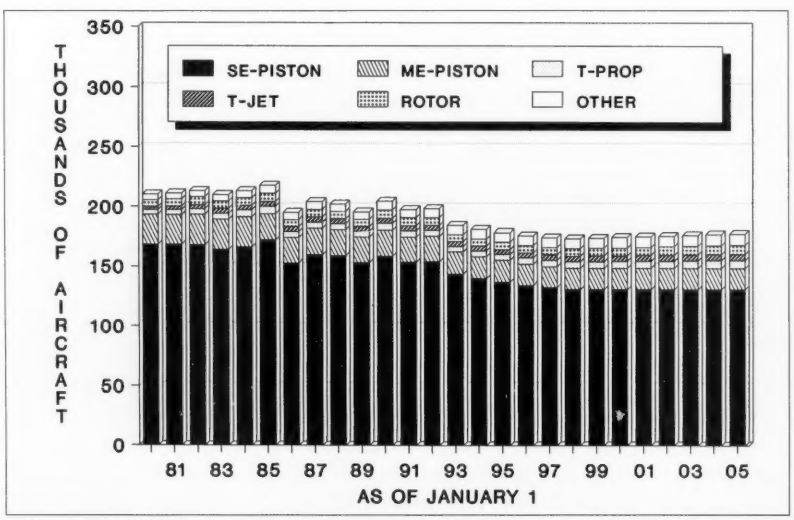
By 2005 there should be 769,700 pilots, a 1% annual growth rate. Recreational and student pilot numbers are expected to increase by just under 1% annually, and this, in turn, will increase the numbers of higher certificate pilots. This also has implications for an increase in pilot training and flight schools, implying future growth for the industry.

Conclusion

Deputy Administrator Daschle had this to say about general aviation's future:

> "With the new partnership we have created, I believe we can look to the future with confidence. It may be brighter than we can imagine."

But predictions are tenuous at best, especially when they hang on unpredictable threads. The optimistic forecasts for general aviation into the next century hinge on capricious events—a continuing, strong economy and passage of legislation from a body sometimes too politic. In a way, the outcome is up to us—members of the general aviation community. ■



Active General Aviation Aircraft—Percentage by aircraft type

*This is the next installment of a character we introduced in the April 94 issue. The Old Cap'n is a crusty, rather outspoken, and experienced aviation instructor who offers his opinions on the foibles of us aviators. Let us know what you think of him and whether you would like to see and read more of the Old Cap'n.—**Editor.***

PART TWO

The Old Cap'n

by Richard Hague

I thought I had recovered from my first encounter with The Old Cap'n when a few days later as I was going over some accident and incident reports, he showed up again. Peering over my shoulder, here's what he had to say.

Student pilot unable to recover from a bounced landing. Pilot allowed the aircraft to drift off the runway and impact the wind tee.

"Well, tie me to the spinner and call me 'Dizzy,'" he said, shaking his head. "Some people don't need a magazine to straighten them out—they need the whole library! And I'm not talkin' about the student, either. I'm talkin' about the CFI. Somebody ought to tie that CFI to what's left of the wind tee without a saddle for a couple of hours."

I winced. "A little harsh?" I said.

"My problem," he said, "is that the student even tried to recover from a bounced landing instead of immediately initiating a go-around."

I felt as if I were being set up, but I responded anyway, "Well, Cap'n, why didn't he?"

"Don't get coy with me, Sprout. Because his bozo CFI didn't put the go-around in his habit pattern. Because his dodo CFI didn't instill the judgement to 'if it don't look right, add power and get outta town.' Because his dumbo CFI didn't impress upon his student never, never to let ego get in the way of common sense.

"I tell my students to continually review the procedures for a go-around and practice them until they become second nature. It's like a 180 under the hood. It's short-term life insurance. Here's what you do:

1. Max power. This means that those of you flying behind constant speed props should have selected full increase RPM/low pitch at either your abeam point or over the Final Approach Fix.

2. Pitch. Shoving the throttle to the firewall will generally give you nose up pitch sufficient to get you into the V_y, best-rate-of-climb, ballpark, but get comfortable with what V_y looks like in the practice area.

3. Configuration. Set the flaps to whatever your Pilot's Operating Handbook (POH) recommends. Some'll say 10 degrees; others'll say "approach flaps." Get the gear up, and confirm a positive rate of climb with a glance at your rate of climb indicator and altimeter. I *didn't* say, "Look out the window." Your aircraft can settle a few feet after you set the V_y pitch attitude. Only after your instrument show a positive rate of climb should you raise the gear handle.

4. Communicate. A go-around is a mandatory call-out at controlled airports, but at non-controlled airports, let folks know what you're doing.

"The first step in learning how to go-around like the pros starts in your den. Place your POH on top of the TV remote control and memorize this three-step procedure when you hear, 'We'll be back right after these words from . . .'

1. Pick up POH—Left hand.

2. Mute button—Right thumb.

3. Open POH—Left hand.

"Now you've got a couple of minutes to study the go-around procedure. Reach for where you know the controls to be so that when you get to the practice area you can polish the maneuver with your head mostly out of the cockpit. Remember PPCC—Power, Pitch, Clean up, Communicate.

"What's next, there?"

C-172M departed airport at 0930. Picked up passenger at another airport at 1000. Departed 1015 for sightseeing. Returned to the first airport at 1525, and first VFR approach was unsuccessful. During the go-around, he ran out of fuel. Unsuccessfully tried to deadstick back to the field.

I braced myself. "Well, Cap'n, what about this one?"

"Well, tie a tire to my rear end and call me conventional. Why, this dodo is to flying what Woody Allen is to Arnold Schwartzenegger. We have here one of those wannabe pilots who believes that he can waive the laws of physics. He thinks he can get six hours out of a 172, that 38 gallons of usable fuel divided by 8.5 gallons per hour equals five hours and 40 minutes plus a go-around, landing, and 30 minutes reserve, and that if he wishes hard enough internal combustion can be sustained not on one part of fuel to 15 parts of air but on no fuel and all air.

"And the excuses are always the same: 'My fuel gauges musta been broke,' 'The gauges showed quarter tanks,' 'The line person musta left the caps off,' 'The book says . . .,'

'I thought the "E" on the gauge meant "Enough."'

"Folks, there's three things you ain't supposed to do ever:

1. Get in the middle of a fight between your spouse and the in-laws.
2. Try to stretch your usable fuel.
3. I forget number three; it's not important.

"How many times do I have to tell you 172 pilots? Your fuel gauge is that thing on your wrist not those little holes in the panel where a needle-width equals about 30 minutes of flight. I mean, even if you can find those things, you can't read 'em. And why would you want to? Unless you're from the 'measure it with a micrometer, mark it with a paintbrush, and cut it with an axe' school of precision carpentry, use your noggin by using your watch.

"The best rule of thumb is, of course, mine."

"So, Cap'n, are you going to enlighten us?"

"Hold yer horse, Sprout. I'm so worked up on this I gotta catch my breath. Now, that rule of thumb is:

1. Start every trip with tanks that you've checked visually. For most flights, they should be full.
2. Subtract 10% from the published usable fuel and use that number as your absolute maximum usable fuel quantity.
3. Plan to land with a minimum of 30 minutes fuel remaining on a VFR flight; 45 minutes for IFR—that's the FAA's rule, not mine.

I counted quickly. "Cap'n," I said, "that's three rules of thumb."

"Getting smart on me again? I still got that wobble pump handle. Have you got more there?"

"No more incidents, but . . . " There was a knock on the door, and I looked up to see a young aviator in the doorway.

"I heard The Old Cap'n was here, and I was wondering if I could ask him a question about aviation?" he said respectfully.

"Of course," the Cap'n replied, "Who better to ask?"

"Alas, Cap'n, time hangs heavy on my hands from the Ides of November through Groundhog Day. When the clement sun chides the hoary zephyrs of Winter, I'm content to slip the surly bonds for a 30-minute VFR local. But since my penchant is not to do any serious flying until well into Spring and not being instrument rated and all, I must await the 'daffodils that come before the swallow dares and take the winds of March with beauty.' But by then, sir, my skills are covered with rust. Is there not some way that I could employ these dismal days to my later advantage?"

"Well, soak in gasoline and call me 'Slick.' I see in you, young fella, the makings of a thoughtful, conscientious, professional aviator—like me.

"I get the old N2's into a hangar and, with a tuning fork set to B-flat, thrum the strut wires. Then, with an old knee hammer that I got from a sawbones pal of mine, I tap the skin all over. Tap-tap-tap. Should sound like Orson Welles saying, 'Boink' into an empty 55-gallon fuel drum. Tap-tap-tap. Should sound like an empty 55-gallon oil drum saying, 'Boink' into Orson Welles. Then, I take some linseed oil and a patch of 220 grit to the prop and . . . "

"Uh, Cap'n . . . "

"Quit flappin' your mandible and take notes. This is pure gold I'm giving you, Sonny."

"But Cap'n, I fly a PA-28 with an aluminum prop."

"Well, why didn't you say so? Still, there's lots of stuff to do. Look at FAR Part 43. As the owner, you are permitted to do a lot of your own maintenance, and, if your A&P is willing to work with you, you can even assist in an annual inspection. Save yourself some dough then spend it on some recurrent training and get your Wings. Just remember—and I'm sure you will because you seem like a conscientious youngster—don't let your vanity get between your cranium and FAR Part 43. 'Bout the only thing more dangerous than a college student in a Volkswagen is an aircraft owner with a toolbox. Know when to bite the bullet and surrender to your A&P.

"Also, you don't have to be an aircraft owner to use winter time to your advantage. Someone in your zip code has a simulator or flight training device for rent. Cheap. And there's no better way to keep your scan sharp than in the box. Now, I'll admit that, as a senior aviator back in the '40's, I poohpoohed the idea of flying a Link Trainer. Until I did it. Until I 'crashed' in the middle of a Fade 90 orientation off a radio range in the Rockies. Until I . . . Huh, what are you waving your arms for?"

"What's a radio range?"

"A's and N's? Dah-dits? Dit-dah's? Never mind. Sheesh. You're so young.

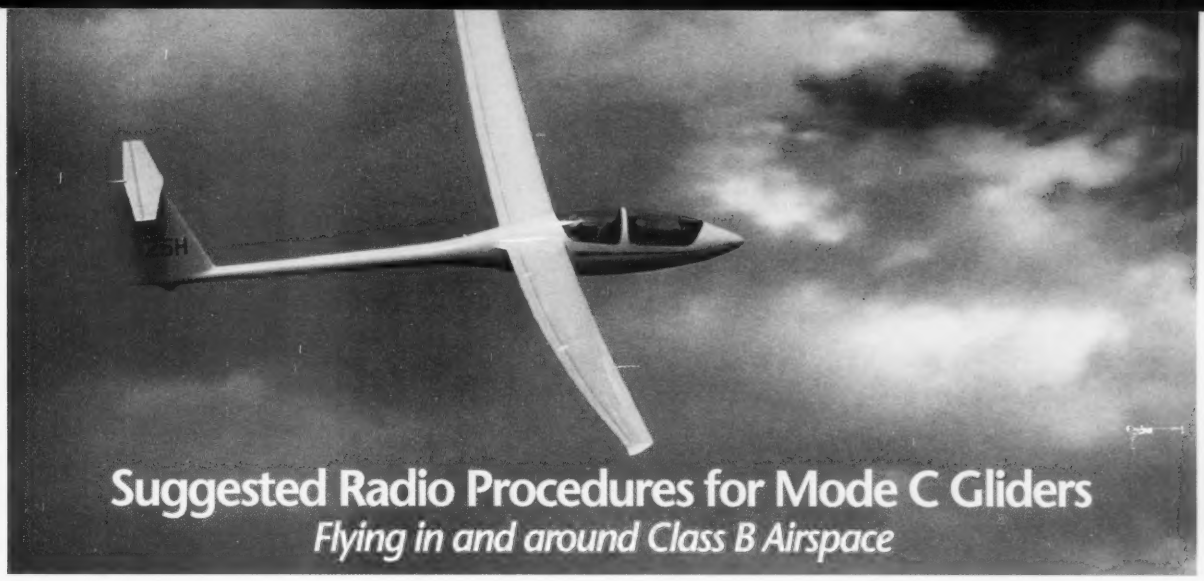
"The point being that a good hour's work in the box is easily as good as three hours flailin' and flappin' around the pattern. And, if your CFI is with you, you can log that time to satisfy the instrument training requirement for your Wings.

"So, laddie, just because the weather's iffy doesn't mean that your skills have to go south with the geese. Use this good time so you'll be a better pilot than you were before you mothballed the fleet for the winter."

My phone rang, and, being the good public servant that I am, I answered it, helped out the taxpayer on the other line, and turned back to the Cap'n.

I was alone. No Cap'n, no intrepid young aviator. I had convinced myself once again this was just my imagination or what I had for lunch, when I heard a whisper.

"Keep the blue side up, Kiddo. See you around the patch." ■



Dereesa Purtell

Suggested Radio Procedures for Mode C Gliders

Flying in and around Class B Airspace

by John O. Graybill

A year ago a former FAA air traffic controller who was also a glider pilot wrote an article for us showing how gliding and ATC could work together. (See the July/August 1993 FAA Aviation News.*) In that article we referenced some suggested procedures for glider/ATC radio procedures that appeared in an October 1992 issue of* Soaring *magazine. With some changes, namely removing references to TCA's and replacing them with "Class B airspace," we offer the following reprint of that article for our glider enthusiasts.* ***—Editor***

Though not required, a number of pilots have installed transponders with attached encoding altimeters (Mode C) in their gliders. With this equipment it is much more likely to get a clearance to operate within Class B airspace. Yet, some new Mode C equipped glider pilots have little or no experience in using the radio in a radar environment. The purpose of this article is to provide suggested radio communications procedures for pilots flying Mode C equipped gliders.

Assuming you are Mode C-equipped and flying cross country (with your crew following by car), there are at least three situations where it would be wise (and sometimes required) to contact the approach control facility associated with the Class B airspace. Those situations are:

1. You are so high you are certain you can overfly the Class B airspace with no additional lift.

2. You are high enough to start out over the Class B airspace, but you are not certain you can make it across without descending into the Class B airspace should you not encounter additional lift.

3. You are so low you are certain you must enter the Class B airspace in order to transit the area.

For all of these situations it would be useful for you to analyze the Class B airspace you think you might encounter. Most, but certainly not all, Class B airspace sits on top of a primary airport with a set of runways that are used most of the time. The majority of the heavy airline traffic will roughly follow the extended centerline of these dominant runways for their approaches and departures. Since this is not always true, you should familiarize yourself with the peculiarities of your target Class B airspace. Once you understand which parcels of airspace in and around your Class B airspace have the most traffic, you can plan your glider flights accordingly. For much Class B airspace, the area least likely to contain jet aircraft is above the center of the Class B airspace directly over the primary airport served by the Class B airspace.

Airspace Considerations

If you are approaching Class B airspace and you are certain you have altitude sufficient to overfly the Class B airspace, then no contact is required. Still, if the Class B airspace is there, you can presume the surrounding airspace is dense with traffic. In fact, air traffic controllers will usually route jet aircraft in and out of the Class B airspace through the top. So there may be benefit in contacting the radar facility, advising them of your plan and requesting VFR radar flight following [over the top].

To receive VFR radar flight following service you must be close enough to be seen by the radar, and within the facility's radio communication area of coverage [usually 30–40 miles]. Any navigation and traffic separation service you receive is strictly advisory. The pilot remains totally responsible for the safe operation of the glider. That means the pilot is responsible for assuring that the glider does not fly into clouds, mountains, or other aircraft.

Receiving VFR radar flight following service does not authorize you to fly into instrument meteorological conditions, and it does not constitute a clearance to enter the Class B airspace.

The availability of this service depends on the controller's workload at the time of your call. If the work load is too heavy, then your request for this service will be denied.

The frequency to use can be obtained directly from the chart associated with the target Class B airspace. If you are flying with a sectional chart or World Aeronautical Chart and do not have a Terminal Area Chart with you, then you should call one of the control towers or flight service stations located near or in the Class B airspace using the frequencies published on those charts. [Adequate preflight planning here could save you a lot of time, effort, and aggravation later.]

Before contacting the approach control facility, you should listen to the Automatic Terminal Information Service (ATIS) associated with the primary airport underlying the Class B airspace. The ATIS frequency is published on all three of the charts mentioned above, and the information you garner can be very useful to your endeavor to transit over or through the Class B airspace.

Essential Information

Before attempting contact with the approach control facility, first be sure you know your position over some clearly identifiable point on the ground. A prominent airport or designated "visual check point" marked on the sectional or [TCA] chart will qualify. When you transmit, you should be prepared to provide the following information:

- Your aircraft registration number.
- The fact that your aircraft is a glider.
- Equipment code [transponder].
- The fact that you are operating VFR.
- Your location and altitude.
- Your request and a statement of your intentions.

Registration Number

You should use your aircraft registration number—not your contest number when communicating with the approach control facility.

Aircraft Type

The controllers very definitely know what a glider is. They may not know what a *sailplane* is. If you identify yourself as a sail***plane***, they may think you are flying some sort of powered air***plane***. Therefore, we suggest you identify yourself by use of their term, ***glider.***

Equipment Code

If you have a Mode C transponder and no other electronic navigation equipment on board, then your equipment code is "/U"—pronounced "slant uniform."

Communication Technique

Listen before transmitting. If the controller sounds swamped, you should consider not calling and continue your overflight of the Class B airspace or avoid it altogether. After listening for a moment and assuming a generally context-clear situation, conduct your radio contact in the following manner:

You: "Las Vegas approach glider one three zero four tango."

Note: The Airman's Information Manual *(AIM) indicates you should use your entire registration number including the "N" on your first call. However, most pilots do not include the "N" but use all the digits after the "N" until the controller uses the shortened form of usually just the last three digits.*

Controller: Glider zero four tango, squawk four two two three ident.

You: Zero four tango roger four two two three ident. [Usually, controllers only want the *ident* as acknowledgement rather than the radio transmission, particularly when they are busy.]

Controller: Glider zero four tango radar contact two seven miles northwest of Las Vegas, altimeter two niner niner two, standby for traffic advisories."

Note: Remember, you have not been given a clearance into the Class B airspace. You are receiving radar flight following service only.

You: Zero four tango roger.

As you make your flight over the Class B airspace, the controller may point out other traffic to you. He or she may also point you out to the pilots of other aircraft operating in or near the Class B airspace. If the controller calls other traffic for you, he or she will likely use the "clock bearing and distance" technique.

This technique presumes that your current track corresponds to the 12 on the face of an analog clock. Thus, if the controller sees traffic ahead of you and slightly to your left, he or she will identify it as,"Traffic 11 o'clock, three miles."

This technique works well with powered airplanes because they tend to fly in nice long, reasonably straight lines. If you stop to make a very tight circle in lift during your overflight, and the controller tries to call traffic for you, the clock bearing technique may not work very well. The heading changes are too rapid while making the tight circles required to climb in strong thermal lift. If the controller calls traffic for you while you are circling in lift and it sound as if the traffic might be a problem (i.e., close to you and at about the same altitude), you should either stop turning or ask the controller for a general compass bearing from your current position. For example, ask, "Is the traffic northeast of my position?"

If you are certain you see the traffic called by the controller, you should so acknowledge. If you do not see the traffic, or if you are not certain what you see, you should likewise inform the controller. The following conversation contains examples of both cases.

Controller: Glider zero four tango, traffic one o'clock, four miles, westbound, Boeing seven three seven, one three thousand five hundred, descending.

You: Zero four tango, roger, traffic in sight.

Controller: Glider zero four tango traffic 11 o'clock, southbound, one three thousand five hundred.

You: Zero four tango, roger, negative contact [or traffic not in sight].

New Controllers, New Frequencies

As you are flying along, the controller may ask you to contact another controller on another frequency. This will occur if you begin to approach the boundary of the controller's area of radar coverage. This process is called a "handoff" and in theory is carefully coordinated between the two controllers. When the controller asks you to change and provides you with the new frequency, you should repeat the frequency (i.e., read it back as a part of your acknowledgement). If no one an-

swers on the new frequency, then change back to the previous frequency and tell that controller you were not able to contact the handoff controller. When you do contact the new controller, you should be sure to mention:

- That you are a glider.
- Your entire registration number (except the "N").
- The fact that you are VFR.
- Your current altitude.
- Your destination.

After changing to the new frequency, again just listen for a moment. This will allow you to judge how busy the new controller is and to determine if he or she is in the middle of a conversation with someone else. Here is how a typical handoff might go:

Controller: Glider zero four tango, contact Nellis approach control, one two four point niner five.

You: Zero four tango, roger, one two four point niner five.

You: (After switching frequencies) Nellis approach, glider one three zero four tango with you VFR, one three thousand eight hundred, going to Overton.

Controller: Glider zero four tango, Nellis approach, roger.

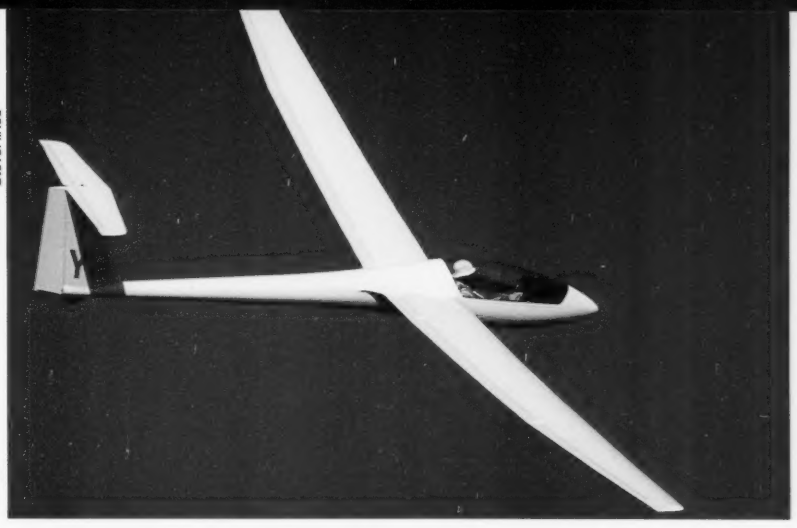
When You Can't Overfly

Thus far, we have dealt with the Class B airspace overfly situation. It may be the case that you are not certain you can glide all the way across the Class B airspace, or you may, in fact, be certain you will descend into the top of the Class B airspace unless you find additional lift. Here, all the contact suggestions described already apply except you should add that you may require a clearance to enter the Class B airspace. Typically, the contact procedure would go as follows:

You: Las Vegas approach, glider one three zero four tango.

Controller: Glider zero four tango, Las Vegas approach, go ahead.

You: Las Vegas approach, zero four tango, glider, slant uniform, VFR over Charleston Peak, one four thousand eight hundred, plan to overfly Class B airspace direct Overton, request VFR flight following. If I do not find lift, may require clearance to descend into the Class B airspace near Nellis Air Force Base.



Steve Hines

Controller: Glider zero four tango, squawk four two two three ident.

You: Zero four tango, roger, four two two three ident.

Controller: Glider zero four tango, radar contact two seven miles northwest of Las Vegas, standby for traffic advisories.

You: Zero four tango, roger.

If you do not find any lift as you glide across the top, when about 1,000 feet above the top of the Class B airspace, call the controller and ask for a clearance to enter the Class B airspace as follows:

You: Las Vegas approach, glider zero four tango has not found any lift, request clearance to descend into Class B airspace.

Controller: Glider zero four tango, you are cleared to descend into the Class B airspace.

It is important to be positive you have actually received a clearance to enter the Class B airspace. If the controller says something slightly ambiguous that may not constitute a Class B airspace clearance, such as, "That sounds okay, no reported traffic," you should press for clarification by saying, "Las Vegas approach, glider zero four tango, confirm clearance to descend into Class B airspace."

In most cases after asking for confirmation you will immediately receive an official Class B airspace clearance.

This raises the question of what to do if you find yourself descending into the Class B airspace and unable to find lift, and, for whatever reason, the controller denies your request for a clearance to continue your descent. If this should happen, your only choice may be to declare an emergency [or more likely, request priority handling].

If you made your request for a clearance when you were above the top of the Class B airspace and the request was turned down, then work every bit of lift you find and hope that you can either climb away or that whatever caused the controller to deny your request will change and that he or she will issue the clearance. When you're still above the Class B airspace and can't find lift, you should alert the controller that you will be forced to declare an emergency if you do not get a clearance. If you still do not get the clearance and you're still descending to within 200 feet of the top of the Class B airspace, call the controller and declare an emergency. Here is how this conversation might go.

About 1,000 feet above the top of the Class B airspace:

You: Las Vegas approach, glider zero four tango has not found any lift, request clearance to descend into the Class B airspace.

Controller: Glider, zero four tango, unable to issue a Class B clearance, remain clear of the Class B airspace.

You: Zero four tango, roger.

About 500 feet above the top of the Class B airspace:

You: Las Vegas approach, glider zero four tango has not found any lift, unable to arrest my descent. I need a clearance to descend into the Class B airspace.

Controller: Glider zero four tango, remain clear of the Class B airspace.

You: Zero four tango, roger. If I am not able to arrest my descent and no Class B airspace clearance is issued, I will be forced to declare an emergency.

Controller: Glider zero four tango, remain clear of the Class B airspace.

About 200 feet above the top of the Class B airspace:

You: Las Vegas approach, glider one three zero four tango is declaring an emergency now and will descend VFR into the top of the Class B airspace. I plan to exit the Class B airspace on the east side above 8,000 and proceed direct Overton.

Controller: Glider, one three zero four tango, roger. Understand you have declared an emergency. Cleared to descend into the Class B airspace.

While declaring an emergency is undesirable, it could be your only choice. If you do declare an emergency, you may be required to file a written report explaining the circumstances. But you are required to file the report only if asked to do so by the FAA.

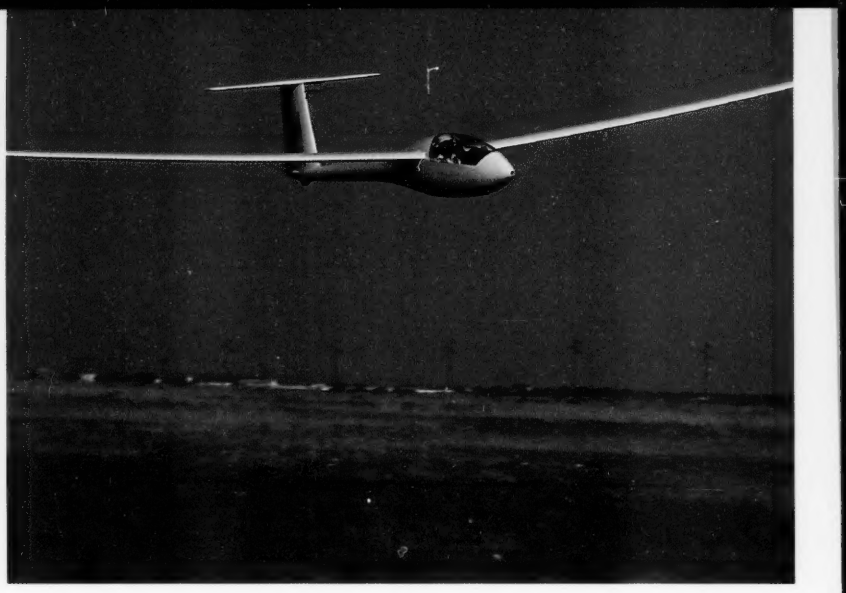
Transitting Class B Airspace

In the cases above, our Mode C equipment allowed us to proceed out over the Class B airspace without a clearance and then get the clearance later, if needed. The next situation involves a newly Mode C-equipped glider pilot who may find that the only way across the Class B airspace is through it. In this instance, you must get a Class B airspace clearance before proceeding. With Mode C equipment, this should not be difficult. Here is how a typical request might go.

You: Las Vegas approach, glider one three zero four tango.

Controller: Glider zero four tango, Las Vegas approach, go ahead.

You: Las Vegas approach, zero four tango, glider, slant uniform, VFR over Blue Diamond, 8,100, request Class B clearance, current position North Las Vegas airport, direct Overton.



SteveHines

Controller: Glider zero four tango, squawk four two two three ident.

You: Zero four tango, roger, four two two three ident.

Controller: Glider zero four tango, radar contact over Blue Diamond, cleared to enter the Class B airspace, current position North Las Vegas, direct Overton, maintain VFR.

You: Zero four tango, roger.

Going Off-Frequency

During your transit through or over the Class B airspace, if the frequency does not sound congested and you want to talk to your ground crew, just ask the controller for a temporary frequency change. If the controller is not working a lot of traffic, he or she will accommodate your request. Here is how you do it.

You: Las Vegas approach, glider zero four tango would like to leave the frequency for a moment to contact my ground crew.

Controller: Glider zero four tango, frequency change approved. Call me when you return to this frequency.

You: Zero four tango, roger.

Once you have finished talking with your ground crew, switch back to the last ATC frequency you were on and call the controller.

You: Las Vegas approach, glider zero four tango, back on frequency.

Controller: Glider zero four tango, roger.

When you are clear of the Class B airspace and decide you would like to leave the approach control frequency permanently to re-establish contact with your crew, you may have to take the initiative with the controller and terminate the relationship. When you are clear of the Class B airspace, you can break it off with the controller and resume contact with your ground crew as follows.

You: Las Vegas approach, glider zero four tango is clear of the Class B airspace, request termination of radar service and frequency change.

Controller: Glider zero four tango, squawk one two zero zero, remain clear of the Class B airspace, radar service terminated, frequency change approved. Good day.

You: Zero four tango, roger.

These procedures have worked well for many of us flying Mode C equipped gliders in and around the Las Vegas Class B airspace. The controller have always been very cooperative, and in most cases our free distance flights proceeded without incident. More often than not the entire process goes very smoothly and with a minimum of inconvenience to our soaring cross country flight operations. ■

The author thanks Doug Helton, Technical Specialist for AOPA and Mel Schuette, Chief, Las Vegas Air Traffic Control Tower for help with the details used in the examples.

FAA Aviation Safety Center Oshkosh '94

For those planning to attend the EAA Convention and Fly-In, here is a preview of the proposed topics to be presented by the Accident Prevention Program. Of course, this schedule is subject to change so, to make sure you don't miss a speaker you really want to hear, double check the Safety Center's Forum schedule when you get to Oshkosh and plan accordingly.

Forum Schedule

THURSDAY, JULY 28

8:30 a.m.–9:45 a.m.
"Flying Enjoyment Through Safety," Jimmy Szajkovics, FAA Accident Prevention Program Manager (APPM)

10:00 a.m.–11:15 a.m.
"184 Survive DC-10 Crash Landing," Capt. Al Haynes' personal report

11:30 a.m.–12:45 p.m.
"Human Performance in Recent Accidents," Dr. Stephen Veronneau, MD, FAA, Aircraft Accident Research Section, Civil Aeromedical Institute

1:00 p.m.–2:15 p.m.
"Ultralight Preflight and Preventive Maintenance," Walter Bevan, FAA Airworthiness Program

2:30 p.m.–3:45 p.m.
"Recent Aircraft Accidents—NTSB Reports the Facts," Steve Wilson, NTSB, Chicago Regional Office

4:00 p.m.–5:15 p.m.
"Cause and Prevention of Landing Accidents," E. Allan Englehardt, Designated Pilot Examiner

6:30 p.m.–7:45 p.m.
"Pilot/Owner Aircraft Maintenance," Martha Winnard, FAA Airworthiness Program

8:00 p.m.–9:15 p.m.
"184 Survive DC-10 Crash Landing," Capt. Al Haynes' personal report

FRIDAY, JULY 29

8:30 a.m.–9:45 a.m.
"Situational Awareness/Spatial Disorientation," Rogers Shaw, FAA Civil Aeromedical Institute

10:00 a.m.–11:15 a.m.
"FLYING FUN—While Avoiding Unwanted Adventure," John and Martha King

11:30 a.m.–12:45 p.m.
"GPS—The Future is Now," Dick Arnold, FAA, Director, GPS/CNS Systems

1:00 p.m.–2:15 p.m.
"Observe an Intoxicated Pilot Flying the Simulator," Dr. Tony Bilotta, AME, and Denis Caravella, FAA APPM

2:30 p.m.–3:45 p.m.
"How to Buy an Airplane," Les Ellingson, FAA APPM

4:00 p.m.–5:45 p.m.
"The Fundamentals of Aviation Weather," E. Allan Englehardt, Designated Pilot Examiner

6:30 p.m.–7:45 p.m.
"Composite Aircraft Accident Review," John Bures, DOT, Transportation Safety Institute

8:00 p.m.–9:15 p.m.
"184 Survive DC-10 Crash Landing," Capt. Al Haynes' personal report

SATURDAY, JULY 30

8:30 a.m.–9:45 a.m.
"Current Legal Issues," Eileen Weikel Johnson, FAA Asst. Chief Counsel

10:00 a.m.–11:15 a.m.
"FLYING FUN—While Avoiding Unwanted Adventure," John and Martha King

11:30 a.m.–12:45 p.m.
"GPS—The Future is Now," Dick Arnold, FAA, Director, GPS/CNS Systems

1:00 p.m.–2:15 p.m.
"New Customer Services from the FAA," Roger Baker, FAA Accident Prevention Program and other FAA specialists

2:30 p.m.–3:45 p.m
"Hear Every Pilot's Nightmare—Greg Leston's Story," Dr. Tony Bilotta, AME, and Dr. Burton Siegel

4:00 p.m.–6:00 p.m.
"Tactical Weather—Spring & Summer Edition," John Steuernagle, AOPA Air Safety Foundation

6:30 p.m.–7:45 p.m.
"New ICAO WX Format—SA Today, METAR Tomorrow," Myron Clark, FAA Nat. Resource for Aviation Weather

8:00 p.m.–9:15 p.m.
"184 Survive DC-10 Crash Landing," Capt. Al Haynes' personal report

SUNDAY, JULY 31
8:30 a.m.–9:45 a.m.
"FLYING FUN—While Avoiding Unwanted Adventure," John and Martha King

10:00 a.m.–12:00 p.m.
"Meet the Administrator," David Hinson, FAA Administrator and his staff

12:15 p.m.–12:45 p.m.
"FAA Supporting General Aviation," Gerald Markey, FAA Spectrum Engineering and Policy Div.

1:00 p.m.–2:15 p.m.
"Flying Left Seat—Passing Your Next Medical," Jon L. Jordan, MD, FAA Federal Air Surgeon

2:30 p.m.–3:45 p.m.
"GPS—The Future is Now," Dick Arnold, FAA, Director, GPS/CNS Systems

4:00 p.m.–5:15 p.m.
"Fuel is Time—How Much is Enough?," E. Allan Englehardt, Designated Pilot Examiner

6:00 p.m.–7:45 p.m.
"Slay that Firebreather," Engine Familiarization for Pilots (Video Presentation)

8:00 p.m.–9:15 p.m.
"Cockpit Complacency," John Steuernagle, AOPA Air Safety Foundation

MONDAY, AUGUST 1
8:30 a.m.–9:45 a.m.
"Aeronautical Charts: How They Can Be a Life Saver!," Hal Becker, FAA Airspace Rules and Aero Information

10:00 a.m.–11:15 a.m.
"Experimental Aircraft Accident Review," Brian Poole, FAA Office of Accident Investigation

11:30 a.m.–12:45 p.m.
"GPS—The Future is Now," Dick Arnold, FAA, Director, GPS/CNS Systems

1:00 p.m.–2:15 p.m.
"That Old Devil Density Altitude," Elizabeth Matarese, FAA Office of Aviation Safety

2:30 p.m.–3:45 p.m.
"What Gyro Instruments Really Tell You," Bruce Edsten, FAA Accident Prevention Program

4:00 p.m.–5:45 p.m.
"Flight Tests—Why Good Pilots Can Fail—Part 1," E. Allan Englehardt, Designated Pilot Examiner with FAA and Examiner Panel

6:30 p.m.–7:45 p.m.
"Primary Aircraft Category Rule—Made Easy," Mark Anderson, FAA Aircraft Certification Office

8:00 p.m.–9:15 p.m.
"Avoiding Stall/Spin Accidents," John Steuernagle, AOPA Air Safety Foundation

TUESDAY, AUGUST 2
8:30 a.m.–9:45 a.m.
"Single-Pilot IFR," John Steuernagle, AOPA Air Safety Foundation

10:00 a.m.–11:15 a.m.
"Avoiding the Typical Accident," Al Neal, FAA Accident Prevention Program

11:30 a.m.–12:45 p.m.
"Converting Ultralights to Two-Place Amateur Builts," Ben Morrow, FAA Small Airplane Directorate

1:00 p.m.–2:15 p.m.
"From the BAX SEAT," Gordon Baxter, *Flying Magazine*

2:30 p.m.–3:45 p.m.
"Field Approvals—the Who, What, When, and How," Karen Forest and Ron Stroup, FAA Chicago Aircraft Certification Office

4:00 p.m.–5:30 p.m.
"Flight Tests—Why Good Pilots Can Fail—Part 2," E. Allan Englehardt, Designated Pilot Examiner with FAA and Examiner Panel

6:00 p.m.–7:45 p.m.
"Slay That Firebreather," Engine Familiarization for Pilots (Video Presentation)

8:00 p.m.–9:15 p.m.
"Situational Awareness/Spatial Disorientation," Rogers Shaw, FAA Civil Aeromedical Institute

WEDNESDAY, AUGUST 3
8:30 a.m.–9:45 a.m.
"Human Performance in Recent Accidents," Dr. Stephen Veronneau, MD, FAA, Aircraft Accident Research Section, Civil Aeromedical Institute

10:00 a.m.–11:15 a.m.
"A Better Approach to Landings," Marlan Perhus, FAA Accident Prevention Program

11:30 a.m.–12:45 p.m.
"Do All Cessnas Look Alike," Doug Haig, FAA Wichita Aircraft Certification Office

1:00 p.m.–3:00 p.m.
"FAR Review for VFR and IFR Pilots-Parts 61 & 91," E. Allan Englehardt, Designated Pilot Examiner

FAA forums are held in the FAA Aviation Safety Center which is located near the main entrance beside the EAA Warehouse Building. ■

• An Old Boy's Club?

Well, I finally know what the expression "Old Boy's Club" really means!

I'm referring to the photo on page 2 of the March 1994 issue. I see the smiling faces of the FAA's "Board of Directors." Am I to assume that there are no competent minorities to represent us? No up-and-coming women, blacks, orientals, or others who could possibly represent today's flying community?

Come out of the Dark Ages, FAA, and step into 1994.

Natalie Orr
Menlo Park, CA

That was sort of my initial reaction to that photo—which I took and decided to publish. What you do not see behind the photo are the women and minorities who are members of the various organizations and who are working their way up through the organizations' ranks to management positions—the FAA included. In fact, if you look on page 3 of that same issue, you will see a picture of the FAA's Deputy Administrator, Linda Hall Daschle.

The Dark Ages are slowly ending, and the Renaissance has quietly begun.

• Solo Multi-Engine Time

I am a private pilot with a single-engine land rating. I have been taking multi-engine training and have been endorsed to solo a multi-engine airplane. I have accumulated quite a few hours of solo time, but since I'm no longer a student pilot I can log that multi-engine solo time as PIC, right? If that's the case, why should I bother to get a multi-engine rating?

Name Withheld
Palm Beach, FL

FAR § 61.51(c)(2) states in part that a pilot may log as PIC only that flight time in which the pilot is "sole manipulator of the controls of an aircraft for which he/she is rated." A solo endorsement for a multi-engine aircraft does not substitute being rated in the aircraft. However, the very next clause in that section of the rule says, "or when the pilot is the sole occupant of the aircraft." Consequently, under FAA policy, you should log the time as solo time (since you're not rated in the aircraft) but that if the PIC time is needed to qualify for a higher certificate or a rating, you may credit it toward any pilot certificate or rating.

By the way, FAR § 61.31(c) states that a pilot cannot carry passengers unless he/she has a category and class rating in the particular aircraft. Take the checkride, get the rating, and you'll be happier for it.

• No Man-Bashing Intended

I recently read your editorial, "Acceptance," in the March issue of FAA Aviation News. Your statements were directly on point with my experiences in aviation. The biggest barrier to women in aviation is the lack of information about female role models. Thank goodness this is changing.

Nikole M. Rose
Port Huron, MI

Obviously, I got across what I was trying to say in that editorial—even though I was accused by a co-worker (male) of man-bashing and radical feminism. The latter I acknowledge proudly, but the former—I wouldn't have gotten where I am today if it weren't for men in aviation, and I respect male and female contributions to aviation. (After all, they were the Wright *Brothers*, but they did have a sister active in their aviation enterprise.) All any woman pilot asks is the same—as Aretha says—R-E-S-P-E-C-T.

FAA AVIATION NEWS welcomes comments from its readers. We may edit letters for style and/or length. We will select a representative letter from those on the same topic for publication, and because of our publishing schedule, responses may not appear for several issues. We will not print anonymous letters, but we will withhold names or send personal replies upon request. Address: Editor, FAA AVIATION NEWS, AFS–810, Washington, DC 20591. FAX (202) 267–9463.

• Ops Inspector Criteria

Thanks for a most educational (but not dull) periodical which is also provocative.

In your November-December 1993 issue, page 15, in the article "So you want to be an FAA inspector" (under Operations Inspectors) it seem a prospective applicant might *qualify by having (among other items) 1000 hours and no more than two flying accidents within the last five years. If correct, upon whose statistics are the criteria based? One accident per 500 hours and, or, 2½ years seems too frequent, but I don't have any stats.*

Charley Hayes
Park Forest, IL

The 1,000 hour specified is part of a minimum 1,500 hour requirement. The number of accidents listed would serve to eliminate reckless pilots while not penalizing pilots engaged in hazardous operations or higher risk exposure because of the number of hours required. The accident statistics are those recorded by the National Transportation Safety Board. The nature of the accident reported and the circumstances surrounding it may provide sufficient justification for waiving the specific criteria.

• ELT Setup

In the January-February 1994 issue, a reader proposed using a weather radio with a built in 121.5 emergency channel to monitor for inadvertent ELT activation. As pointed out, it would have to meet FAR § 91.21 to be legal which might take it out of the "inexpensive receiver" range.

You also mentioned that "pilots and aircraft owners might want to consider" installing "a remote ELT switch in the cockpit" and an "activation monitor." I handled this matter and the ELT battery replacement problem in December of 1992 with the purchase of an ACK Model E-O1 ELT which meets TSO C-91a.

In addition to having an ON-OFF-ARMED switch on the ELT, it also has a "Remote Control Panel Indicator" (RCPI) unit containing "ON" and "RESET" switches and an "ELT ON" LED which flashes when the unit is activated. It also resolves the battery problem by using 8 Duracell MN1300 alkaline "D" cells (which carry an expiration date). All batteries must have the same date and must be replaced on or before that date. The batteries I purchased locally were all dated 1/97. While that would give them a five-year life, ACK suggests that, since they are relatively inexpensive and have many other uses and are easily changed, they be replaced annually.

A.E. McLaughlin, Jr.
Brentwood, NY

Thank you for your comments. Your letter provides one more way of reducing and/or detecting inadvertent ELT activations. One way every pilot can detect an inadvertent ELT activation is by tuning his or her aircraft radio to 121.5 before turning it off before engine shutdown. Everyone in the search and rescue business would appreciate the check. If all pilots and FBO's would add this simple radio check to their shutdown or closing checklists, it would save hundreds of search hours both on the ground and in the air and thousands of dollars that are spent annually by SAR units searching for non-emergency activated ELT's.

• Direct Routing/Procedure Turn

I have been under the impression that a procedure turn is required if you are approaching the FAF on a direct routing that happens to be within 30 degrees of the final approach course. I know that TERPS allows publication of a straight-in approach if the published route is within 30 degrees, but this does not apply to direct routings to the FAF. A recent article in a generally reliable IFR refresher type publication indicated that direct routings within 30 degrees of the final approach course should proceed straight in. If this is so, could you provide a reference?

King Povenmire
Eugene, OR

We can't. The Airman's Information Manual (AIM) paragraph 5–46 (e) states in part that when pilots are cleared for a specifically prescribed instrument approach procedure (IAP), pilots shall execute the entire procedure as described on the IAP Chart unless an appropriate new or revised ATC clearance is received, or the IFR flight plan is canceled. Paragraph 5–47 of the AIM states that a published procedure turn is required maneuver except when the symbol NoPT (no procedure turn) is shown, when RADAR VECTORING is provided, when a holding pattern is published in lieu of procedure turn, when conducting a timed-approach, or when the procedure turn is not authorized. Subparagraph C of 5–46 does state in part that "If a pilot is issued a clearance that specifies a particular approach procedure, he is expected to notify ATC immediately if he desires a different one." You can ask ATC for a straight in. But you need to talk to ATC and receive its authorization before doing anything that is not listed on the IAP ATC has cleared you for. You never want to surprise ATC by doing something unexpected.

InstrumentCorner

• IFR Currency Requirements

There are a few questions that keep coming up about instrument currency. If an instrument rated pilot does not have the six hours and six approaches in six months required by FAR § 61.57(e)(1) but passes an instrument competency check as required by FAR § 61.57(e)(2), can he then fly IFR or does he still need the six hours and six approaches? If he passes an instrument rating check ride, type rating check ride, Airline Transport Pilot check ride or FAR 135 instrument check ride, does he still need the six hours and six approaches?

If a pilot is past the one year requirement of FAR § 61.57(e)(2) and passes a check ride for an ATP, type rating or FAR Part 135 IFR, is he required to have a separate sign off to meet the requirements of FAR § 61.57(e)(2) or is the paperwork for these other check rides sufficient?

Charles M. Jamieson, Jr.
Metairie, LA

A pilot who passes an instrument competency check required by FAR § 61.57(e)(2) does not need six IFR hours and six approaches in addition to passing the instrument competency check. The competency check suffices.

Any check ride in which the pilot demonstrates instrument competency may serve as an instrument competency check if the check ride meets the requirements of FAR § 61.57(e)(2). Passing an ATP check ride reestablishes instrument currency.

Regarding record keeping, although the FAR require only a reliable record to show compliance with the FAR, a pilot should ask for an appropriate entry in his or her log book. The reason is some check flight records such as a company FAR Part 135 checkride may not be entered in the pilot's logbook.

Cockpit Sexual Harassment Follow-up

In the March 1994 issue of FAA Aviation News we included an article entitled "Sexual Harassment on the Flight Deck." The article reported that a first officer sued her airline, alleging sexual harassment during her training and while flying the line. The first officer also alleged that on one trip a captain had sexually assaulted her.

Since that article reported the allegations, we have learned the disposition of the case. During court proceedings, the first officer admitted that she had falsely accused the captain because she was tired of receiving criticism of her flying skills. The captain and the airline were exonerated, and the first officer no longer works for the airline.

Even though the case reported in the March 1994 issue of FAA Aviation News was a false accusation (which taints the atmosphere for those who have legitimate claims), sexual harassment has occurred in aircraft cockpits. Because it can create a hostile work environment, it is a safety issue that every professional aviator should be aware of. Therefore, we stand by the following excerpt from that original article:

> "When unwelcome sexual advances, adverse sexual comments, or sexually offensive actions occur, they poison the synergistic atmosphere on the flight deck. This must be recognized by everyone as one of the most serious threats to safe flight operations. Consequently, it cannot be tolerated . . . . Sexual harassment compromises flight safety in a significant way, and since women are going to become a larger force in the professional pilot ranks, this problem will not go away. Employers must, therefore, expand training to include this very crucial and timely topic."

EAA's Young Eagles

The Experimental Aircraft Association's (EAA) Young Eagles Program which is designed to introduce young men and women to aviation by taking them for a demonstration flight, has been a tremendous success, and EAA is well on the way to accomplishing its goal to fly a million boys and girls by the turn of the century. At last count more than 60,000 Young Eagles have participated in the program. The largest Young Eagles event to date was in March at Gwinnet County Airport north of Atlanta, GA. More than 250 boys and girls, many from the inner city, took airplane rides. This event had tremendous community and school support.

EAA has announced that every year from now until 2003 there will be an International Young Eagles Day the second Saturday in June. This year, the first Young Eagles Day was June 11. Local EAA Chapters will have information on Young Eagles events. For information on chapters in your area, you can contact EAA at (414) 426-3134. You can call the Young Eagles office for program information at (414) 426-4800.

AOPA's Project Pilot

EAA, through its Young Eagles program, is not alone in promoting general aviation. The 325,000-member Aircraft Owners and Pilots Association (AOPA) started its own new pilot program in March. According to AOPA, its Project Pilot program is designed to promote new pilot training starts by asking its members to "nominate individuals whom they personally know to be ready, willing, and able to begin flight training now, or be a likely prospect to do so in the immediate future. Nominees will then receive by mail a valuable starter kit from AOPA, including AOPA's new 37-minute 'Joy of Flying' video and an 82-page special edition of *AOPA Pilot* magazine entitled, 'An Invitation to FLY!' Both feature complete information, tips and guidance on learning to fly and an exciting look into the lifestyles of today's pilots."

RONALD D. DRAKE

1941–1994

FAA's Accident Prevention Program lost a dedicated practitioner of aviation safety on May 17, 1994. Ronald D. Drake, the Accident Prevention Program Manager at the Cleveland, OH, FSDO since 1987, died in Missouri while on vacation, bicycling from Tulsa, OK, back to Ohio.

Ron joined the FAA in the early 1970's, working first for the Air Traffic Service. He worked for several years in Flight Service before joining Flight Standards as an operations inspector. He was rated in several airplanes, including the CASA 212, and also was glider rated.

In addition to his dedication to the Accident Prevention Program, Ron provided invaluable assistance to *FAA Aviation News* for an article on air shows, which appeared in the November/December 1991 issue. He had also recently sponsored an aviation crossword puzzle contest for the magazine. The first crossword appeared in the January/February 1994 issue, and his most recent offering, submitted just two weeks before his death, appears in this issue.

Ron was a popular draw at FAA's safety forums at the EAA Oshkosh Convention and Fly-in every summer. He authored an article on his favorite forum subject—how to pass a check ride—for *FAA Aviation News*.

Conversations about aviation with Ron were always enthusiastic and joyful. This enthusiasm for aviation and his devotion to his Accident Prevention duties are his finest professional tributes. More than that, everyone who knew him is saddened by the loss of a truly nice man.

Ron is survived by his wife, Patsy; three children, Roger, Jonathan, and Lisa; and one grandson. Ron's family has asked that donations in his memory be sent to the Athletic Band Booster Club, Oberlin High School, 281 N. Pleasant St., Oberlin, OH 44070.

An important part of Project Pilot is its mentor program. Once a pilot nominates an individual for the program, that pilot can volunteer to become a mentor for that nominee. As a mentor, the pilot is expected to help the student find a flight school and instructor and serve as a friend and supporter during the nominee's student training period.

Since the program was announced, AOPA has sent out nearly 5,000 Project Pilot starter kits. For more information on AOPA Project Pilot, you can call AOPA at 1-800-USA-AOPA.

AOPA and EAA are both working hard to promote the excitement, fun, and benefits of general aviation to a new generation of potential pilots. AOPA's pilot program for all ages, and especially the youth programs such as EAA's Young Eagles and the Civil Air Patrol's Cadet citizenship program, are designed to show the youth of America and others interested in aviation how they can enjoy the challenges and rewards of aviation.

Aviation offers something for everyone. For many, their interest in aviation can lead to an exciting career. For others, their interest can lead to a life-long love affair with flying and aircraft.

Because these various programs are building the future of aviation, everyone interested in aviation or who benefits from aviation should support these and other such programs in their efforts to revitalize general aviation.

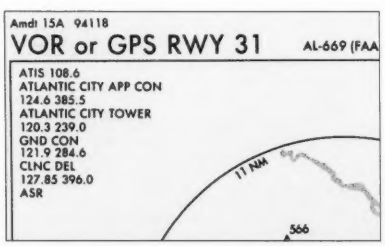
24-hour FIRC Requirement Eliminated

The 24-hour flight instructor refresher course (FIRC) requirement is history. In a final rule effective on April 13, 1994, FAA Administrator David R. Hinson approved a change to FAR § 61.197(c) that eliminates the requirement for flight instructors to attend an approved flight instructor refresher course of at least 24 hours of ground or flight instruction, or both as one means of renewing their flight instructor certificate. The new rule does not specify the number of hours that CFI's must attend a FIRC to renew their certificates, but specifies instead the minimum number of hours that will be approved by the FAA when FIRC's submit training course outlines for review. A corresponding change was made in FAR § 141.79 (c) to eliminate the 24-hour FIRC requirement for chief flight instructors of FAR Part 141 Pilot Schools.

The rule changes resulted from a petition the FAA received from the Aircraft Owners and Pilots Association asking to reduce its 24-hour FIRC to 16 hours. After considering the petition and other respondents, FAA decided that because of the rapid changes in technology and training methods, any reference to a regulatory minimum number of hours for a FIRC would be inappropriate. FAA will publish a revision to Advisory Circular 61.83, Nationally Scheduled Federal Aviation Administration-Approved Industry-Conducted Flight Instructor Clinics, outlining requirements and standards for FIRC's under the revised rule. Each FIRC then will be approved on a case-by-case basis. FAA believes this rule change will provide an equivalent level of safety while reducing the economic and training burden on dedicated flight instructors.

GPS Overlay Procedures

The FAA approved the use of "GPS" for 307 instrument approach procedures in the U.S. with the publication of the April 28, 1994, edition of the U.S. Government Flight Information Publication instrument approach procedures. The new GPS overlay procedures are the first of approximately 4,000 to be developed in support of the FAA's GPS Overlay Program. The procedures are listed under their respective city names as "or GPS." Each GPS procedure is "overlaid" upon another non-precision approach approved for the designated airport. Localizer (LOC), localizer directional aid (LDA), and simplified directional facility (SDF) procedures are not included in the new GPS procedures.



The publication of the "or GPS" procedures puts the FAA in Phase III of its GPS Overlay Program. In Phase III, pilots with approved IFR GPS receivers can fly GPS IFR non-precision approaches to those airports with the new "or GPS" approaches. Pilots must request the new GPS approaches. As shown in the NOTICES TO AIRMEN (NOTAMS), a typical request might be "Request GPS Rwy 24 approach."

Under Phase III, ground-based navaids are not required to be operational and the aircraft is not required to have compatible avionics installed, be operational, be turned on, or be set to monitor the ground-based navaid. Under Phase II and III of the Overlay Program, GPS is stand alone for the approach, however, the other airborne navigational equipment appropriate to the route of flight, (e.g. VOR) must be installed and operational. For example, even though on the approach GPS airborne receivers would be used, to fly say V210, the VOR equipment appropriate to navigate over V210 must be installed and operational. Pilots must have certificated IFR GPS equipment on board that meets TSO C-129.

One requirement listed in the NOTAM for every phase of the GPS Overlay Program is that if an alternate airport is required, it must have an approved instrument approach procedure, other than GPS or Loran-C, which is anticipated to be operational and available at the estimated time of arrival. This requirement then requires compatible avionics gear be operational in the aircraft at the estimated time of arrival at the alternate airport. This does not preclude the pilot from conducting a GPS approach to the alternate airport if a GPS overlay approach is approved for the airport.

The Technical Programs Division (AFS-400) of the Flight Standards Service expects to approve about 4,000 of the "or GPS" non-precision approaches during the next year.

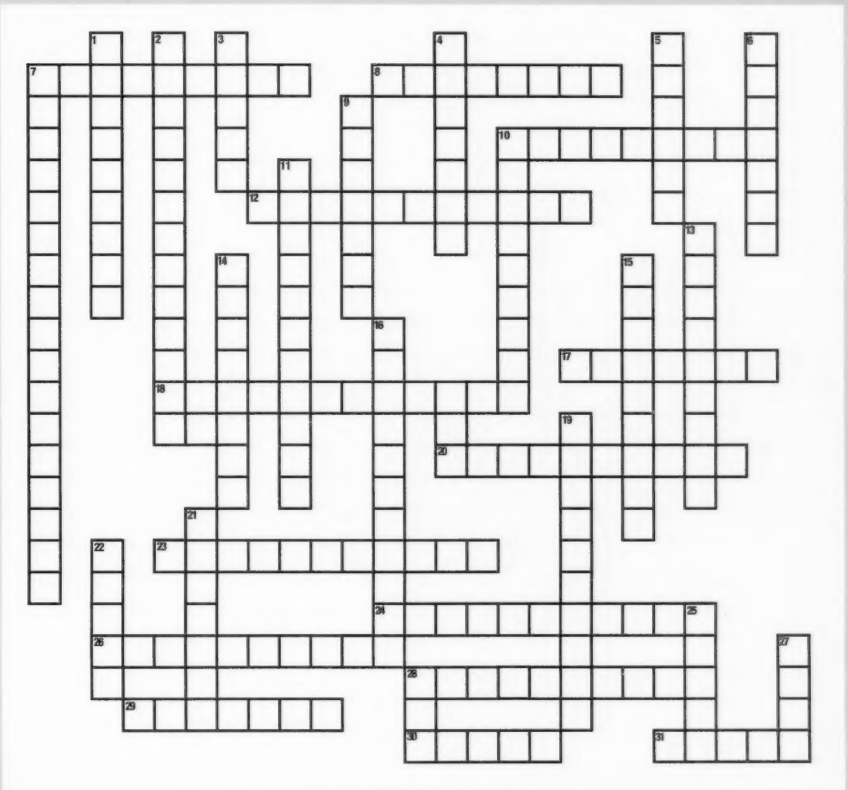
What's another name for these aircraft?

ACROSS

7. MO20-F
8. AS-355-F
10. BE-18-D
12. BL-17-31ATC
17. BE-76
18. BE-200
20. AR-11-CC
23. CE-421
24. BE-50
26. MOONEY-18-C
28. CE-414
29. LR-25
30. BE-55
31. GC-1-A

DOWN

1. CE-210
2. B-29
3. GA-AG-5B
4. CE-500
5. PA-34-200
6. CE-172
7. CE-320-F
9. SA-341-G
10. DHC-6-1
11. AYRES-S2-R
13. BE-23
14. AR-7-AC
15. MBB-BK117-A1
16. EMB-110
19. BN-2AMK3-2
21. BE-35
22. BL-7-S7CCM
25. PA28R-180
27. SLNSBY-T51-17R
28. J3



Our thanks to the Tim Lett and the late Ron Drake for submitting this puzzle. The first 10 correct crossword puzzles submitted to the address below will win an FAA video tape. The correct answers will appear in the next issue of *FAA Aviation News*. Submit your completed pilot puzzle along with your name and address to:

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